UN(
~!TY CLAS

AD-A230 329

'CUMENTATION PAGE

1a REPORT SECURITY CLASSIFICATION Unclassified			1b. RESTRICTIVE MARKINGS			
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION / AVAILABILITY OF REPORT "A" Approved for public release; distribution unlimited.			
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE						
4. PERFORMING ORGANIZATION REPORT NUMBER(S) LMI-PA902R1			5. MONITORING ORGANIZATION REPORT NUMBER(S)			
6a NAME OF PERFORMING ORGANIZATION Logistics Management Institute		6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION			
6c. ADDRESS (City, State, and ZIP Code) 6400 Goldsboro Road Bethesda, Maryland 20817-5886			7b. ADDRESS (City, State, and ZIP Code)			
8a. NAME OF FUNDING / SPONSORING ORGANIZATION OASD(PA&E)		8b. OFFICE SYMBOL (if applicable) ACS	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER MDA903-85-C-0139			
8c. ADDRESS (City, State, and ZIP Code) OASD(PA&E), ATTN: ACS, The Pentagon Room 2D321 Washington, DC 20301			10. SOURCE OF FUNDING NUMBERS			
			PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO.	WORK UNIT ACCESSION NO.

11. TITLE (Include Security Classification)

Information Resource Management Planning in the Office of the Assistant Secretary of Defense (Program Analysis and Evaluation)

12. PERSONAL AUTHOR(S)
Carl H. Groth, Jr., Paul Koshetar, Jr., Sharon Murry,

13a. TYPE OF REPORT Final	13b. TIME COVERED FROM _____ TO _____	14. DATE OF REPORT (Year, Month, Day) July 1990	15. PAGE COUNT 96

16. SUPPLEMENTARY NOTATION

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	IRM plan, Information System Strategic Planning

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

Arms control negotiations and changes in the military threat have combined to create a surge in the mission requirements of the Office of the Assistant Secretary of Defense (Program Analysis and Evaluation) [OASD(PA&E)]. These requirements impose an increased need for information at a time of severe DoD budget reduction.

Although the FY90 PA&E information resource budget of $12 million meets current requirements, the ASD(PA&E) and his deputies must make major decisions in the future allocation and management of information resources. This information resources management plan analyzes the issues and recommends ways to reduce deficiencies in managing information resources.

The management of information resources within PA&E suffers from four principal deficiencies:

● Inefficient organizational structure for managing information resources

● Inadequate planning for the transition of mainframe databases and applications from the Honeywell MULTICS system to the new Headquarters Systems Replacement Program

20 DISTRIBUTION / AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS	21. ABSTRACT SECURITY CLASSIFICATION	
22a. NAME OF RESPONSIBLE INDIVIDUAL	22b. TELEPHONE (Include Area Code)	22c. OFFICE SYMBOL

DD FORM 1473, 84 MAR — 83 APR edition may be used until exhausted. — SECURITY CLASSIFICATION OF THIS PAGE

All other editions are obsolete.   UNCLASSIFIED

19. Abstracts (continued)

- Inefficient office automation for handling word processing, document coordination and distribution, forms management, and electronic mail
- Inadequate horizontal communication within PA&E of the availability of databases and information processing capabilities.

This plan recommends actions needed to reduce the deficiencies.

INFORMATION RESOURCE MANAGEMENT PLANNING IN THE OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE (PROGRAM ANALYSIS AND EVALUATION)

Report PA902R1

July 1990

Carl H. Groth, Jr.
Paul Koshetar, Jr.
Sharon Murry

Accession For	
NTIS GRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

LOGISTICS MANAGEMENT INSTITUTE
6400 Goldsboro Road
Bethesda, Maryland 20817-5886

91 1 2 031

Executive Summary

INFORMATION RESOURCE MANAGEMENT PLANNING IN THE OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE (PROGRAM ANALYSIS AND EVALUATION)

Arms control negotiations and changes in the military threat have combined to create a surge in the activities of the Office of the Assistant Secretary of Defense (Program Analysis and Evaluation) [OASD(PA&E)]. These activities impose an increased need for information at a time of severe DoD budget reduction. To complicate matters, PA&E is undergoing a forced conversion to a new mainframe computer system that has not been well configured to meet its needs. All these circumstances give the ASD(PA&E) and his deputies increased incentive to acquire and manage information resources more efficiently.

The Fiscal Year 1990 (FY90) PA&E information resource budget was $17 million. For FY91 and beyond, the ASD(PA&E) and his deputies must make major decisions in the allocation and management of information resources.

The management of information resources within PA&E would benefit from four major initiatives:

- Improved organizational structure for managing information resources

- Improved planning for the transition of mainframe databases and applications from the Honeywell MULTICS system to the new Headquarters Systems Replacement Program

- Improved office automation for handling word processing, document coordination and distribution, forms management, and electronic mail

- Improved horizontal communication within PA&E of the availability of databases and information processing capabilities.

PA&E information resources are allocated to separate functional areas of the organization without adequate coordination or consideration for overall organizational priorities. The management of information resources is largely divided among five staff members: the Assistant for Computer Science manages most hardware and software acquisition and maintenance; the Assistant for Planning

manages databases of force level and weapons inventory information; the Deputy Assistant Secretary of Defense (Resource Analysis) manages the program review and cost analysis processes; the Deputy Assistant Secretary of Defense (General Purpose Programs) manages the lion's share of studies aimed at model development; and the Information Assistant manages document storage and retrieval. There are opportunities to achieve major improvements in coordination and in the allocation of constrained information system resources. We propose some modest organizational changes to allow centralized management of information resources in accordance with senior management priorities.

PA&E's participation in the mainframe conversion program should be re-examined to determine which conversion activities still need to be carried out. It appears, for example, that a number of the applications can be more cost-effectively moved to microcomputers or minicomputers.

The new Assistant for Computer Science is improving office automation by upgrading and increasing the availability of microcomputers; plans call for networking these microcomputers into local area networks within each division. The transition from Xerox Viewpoint to Wordperfect word processing is being facilitated by mandatory training of clerical staff and by offering training to analysts and managers. Office automation and associated local area network development should receive priority consideration for resources in the next few years in order to best expedite PA&E production of its major information products and promote internal communications within PA&E.

CONTENTS

CONTENTS (Continued)

SECTION 1

INTRODUCTION

1.1 OBJECTIVE

This information resource management (IRM) plan has the following objectives:

- To describe the process for planning and programming for information resources for the Office of the Assistant Secretary of Defense (Program Analysis and Evaluation) (PA&E)

- To evaluate how effectively information is being managed in support of the PA&E mission

- To prescribe IRM goals and objectives aimed at improving the management of information and strategies for their implementation.

1.2 SCOPE

Information resources that should be managed as an integrated whole include not only information technology (IT) resources such as computer and telecommunications hardware and software, but also other information resources such as office records management and document storage and retrieval systems. This plan addresses the management of all such information resources. Since information must support the principal business of the ASD(PA&E), this plan begins with a description of the ASD(PA&E)'s functions and management goals. The priorities for the functions are established by the goals and objectives of the ASD(PA&E). They determine the data that PA&E needs and the information products it must produce.

Studies sponsored by the PA&E are also an important indicator of information needs. Studies identify the data needs of managers and analysts and are an early indicator of subsequent IT requirements. Thus, this plan considers PA&E studies and study plans.

1.3 ORGANIZATION AND USE OF THIS PLAN

This plan proceeds from a description of mission functions and management goals through an evaluation of how well IT supports those mission functions and

management goals to the IRM goals, objectives, and strategies that can effectively support PA&E. This plan presents these key elements:

- *Section 2 — Mission and Goals* describes the PA&E mission environment. It establishes the linkage between the ASD(PA&E)'s mission functions and goals and those of each Deputy Assistant Secretary of Defense (DASD) in PA&E. This linkage provides the means by which priorities are set for planning and programming information resources in Section 4.

- *Section 3 — Analysis of Commitments and Plans* provides an overview of the IRM planning, programming, and budgeting system (PPBS); the current allocation of information resources; and plans for their future allocation. Current resource allocation and plans are evaluated in light of mission functions and management goals. Since this is the first IRM Plan for the ASD(PA&E), its conclusions form the basis for IRM goals and objectives presented in Section 4.

- *Section 4 — The 7-Year Information Resource Management Plan*, stated in terms of IRM goals and objectives, describes the allocation of information resources to effectively support PA&E. These goals and objectives, together with their implementation strategy, guide the overall management of PA&E information.

This plan is staffed by the Assistant for Computer Science (ACS) in PA&E in conjunction with the planning and programming portions of the Office of the Secretary of Defense (OSD) PPBS in the spring of each year. A revised plan that reflects the information needs for all PA&E components is presented to the ASD(PA&E) in sufficient time to allow him to consider these information needs along with requirements for personnel, administrative, and R&D support. The ACS is responsible for (1) collecting information resource program funding requirements from the DASDs; (2) analyzing those requirements and presenting goals, objectives, and strategies; (3) presenting IRM plan alternative strategies; and (4) producing and distributing the approved plan.

1.4 APPENDICES

Appendices to this plan contain the following background and procedural information to support appropriate sections of the plan.

- *Appendix A — Information Resource Management Policies and Directives* describes the policies and directives that govern the management of information.

- *Appendix B — Information Resource Management Planning, Programming, and Budgeting* describes the organization, structure, and responsibilities for IRM management in PA&E.

- *Appendix C — Information Project Support for PA&E IRM Programs* describes the relationship PA&E program projects, and budgets to other OSD IRM programs.

- *Appendix D — Information Technology Baseline* describes the present and planned IT resources that support PA&E.

- *Appendix E — Information Security* provides an overview of OSD policies and procedures for processing classified information using automated information systems (AISs).

SECTION 2

PROGRAM ANALYSIS AND EVALUATION MISSION AND GOALS

2.1 INTRODUCTION

The responsibilities and mission of the ASD(PA&E) are enumerated in DoD Directive (DoDD) 5141.1, *Assistant Secretary of Defense (Program Analysis and Evaluation)*, 1 February 1989. These formally chartered responsibilities, functions, and policies are carried out within the context of management goals that establish the emphasis placed on competing requirements, responsibilities, functions, and policies.

Mission functions and responsibilities change infrequently and usually only with organizational change. Policies can change more frequently — usually in conjunction with changes in national military strategies or executive direction. Management goals can change even more often, with the change of senior executives and with other changes in the decision-making environment. Changes in technologies, national security strategies, alliance relationships, and legislative conditions often alter management goals and may require even more frequent changes in the objectives that determine how and when goals are to be met.

Planning for the many functional areas of an organization such as PA&E needs to be anchored to overall management needs and priorities. IRM planning particularly needs such a foundation since information and information technologies support every function carried out within PA&E.

Management goals provide priorities for organizational responsibilities and functions. These priorities also direct the allocation of information resources to satisfy project and program objectives. The identification of these management goals, together with the linkage of projects to programs, is the foundation for IRM planning and programming.

The organizational responsibilities and functions for PA&E and its components are extracted from appropriate DoDDs, as are the policies that guide management of the PA&E office. The PA&E senior executives provide management goals.

Interviews with senior executives and reviews of PA&E planning documents are the sources of the goals described in this initial IRM plan.

2.2 MISSION AND RESPONSIBILITIES

2.2.1 ASD(PA&E)

Department of Defense Directive 5141.1 describes the responsibilities of the ASD(PA&E). The ASD(PA&E) is the principal staff assistant and advisor to the Secretary of Defense on all matters relating to the performance of analyses and evaluation of policies, plans, programs, and budget submissions. DoDD 5141.1 also describes the ASD(PA&E)'s authorities and relationships with other DoD officials.

The specific responsibilities described in Paragraph C of DoDD 5141.1 are listed in Table 2-1. The functional areas described in Paragraph D are listed in Table 2-2.

TABLE 2-1

ASD(PA&E) RESPONSIBILITIES

1. The ASD(PA&E) shall:
a. Provide advice, make recommendations, and participate in the development of policies and the preparation of planning, fiscal, and materiel support guidance upon which DoD program projections are based.
b. Perform analyses and evaluations of plans, programs, and budget submissions in relation to projected threats, Allied contributions, estimated costs, resource constraints, and U.S. defense objectives and priorities.
c. Identify issues and evaluate alternative programs.
d. Initiate programs, actions, and taskings to ensure adherence to DoD policies and national security objectives, and ensure that programs are designed to accommodate operational requirements and promote the readiness and efficiency of the U.S. Armed Forces.
e. Review, analyze, and evaluate programs, including classified programs, for carrying out approved policies and standa...
f. Ensure that the costs of DoD programs, to include classified programs, are presented accurately and completely.
g. Assess the effects of DoD spending on the U.S. economy, and evaluate alternative policies to ensure that the DoD program can be implemented efficiently.
h. Provide leadership in developing and promoting improved analytic tools and methods for analyzing national security planning and the allocation of resources.
i. Serve on boards, committees, and other groups pertaining to the ASD(PA&E)'s functional areas, and represent the Secretary of Defense on PA&E matters outside the Department of Defense.
j. Perform other duties as the Secretary of Defense may assign.

Source: Paragraph C, DoDD 5141.1

TABLE 2-2

ASD(PA&E) FUNCTIONAL AREAS

1.	General purpose force structure, both active and reserve
2.	Strategic and theater nuclear force structure
3.	Mobility force structure and prepositioning plans
4.	Force readiness and capabilities
5.	Weapon systems and major items of materiel
6.	Implications for manpower resources of specific force structure plans
7.	Support systems
8.	Contingency plans
9	Materiel support programs and war reserve stocks
10	Deployment plans and overseas basing requirements
11	Mobilization plans
12	Effects of the DoD program on the economy and the industrial base
13	Security assistance programs
14	Allied and foreign military requirements and capabilities
15	Nuclear warhead requirements
16	Such other areas as the Secretary of Defense may from time to time prescribe

Source: Paragraph C, DoDD 5141 1

2.2.2 Deputy ASDs in PA&E

The ASD(PA&E) is assisted by five deputies in carrying out his responsibilities:

- The Principal DASD manages the internal administration of the PA&E, assists the ASD in carrying out his responsibilities, and acts in place of the ASD during his absence.

- The DASD (Strategic Programs) [DASD(SP)] is the principal staff assistant and advisor to the Secretary of Defense and ASD(PA&E) for the review and analysis of DoD strategic offensive forces programs, strategic defensive programs, and programs involving theater nuclear weapons.

- The DASD (Theater Assessment and Planning) [DASD(TA&P)] is the principal staff assistant and advisor to the Secretary of Defense and ASD(PA&E) for the review and analysis of DoD theater force capabilities and force projection capabilities and for improving DoD's long-term planning capability.

- The DASD (General Purpose Programs) [DASD(GPP)] is the principal staff assistant and advisor to the Secretary of Defense and ASD(PA&E) for the

review and analysis of tactical air and nonstrategic naval and land forces programs.

- The DASD (Resource Analysis) [DASD(RA)] is the principal staff assistant and advisor to the Secretary of Defense and ASD(PA&E) for the review and analysis of DoD cost analyses, weapon system acquisitions, the PPBS process, and the DoD budget as a whole.

The principal components of PA&E are shown in Figure 2-1.
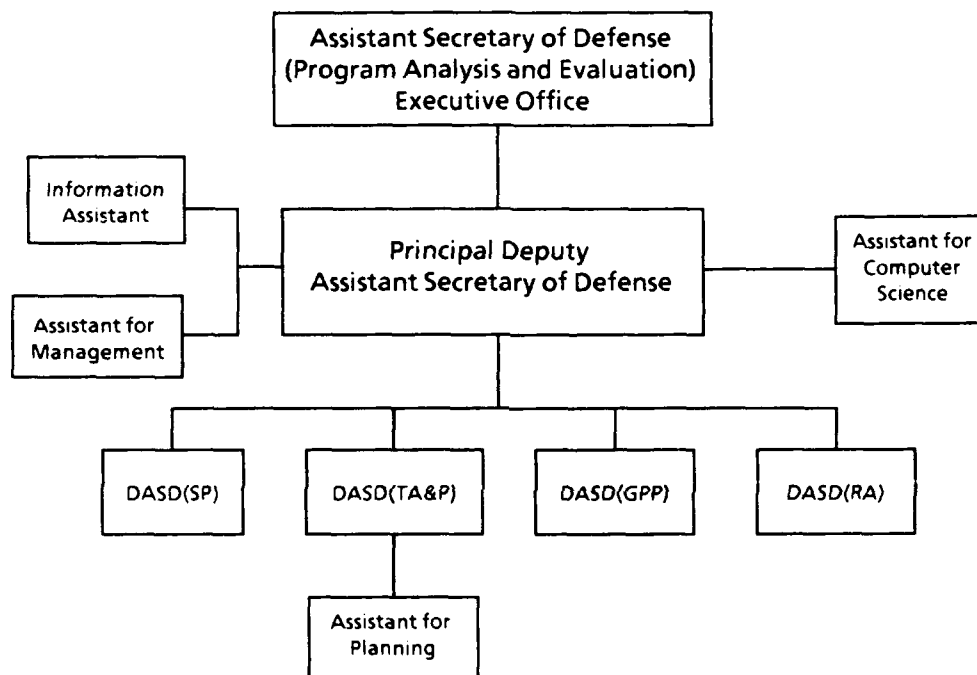
FIG. 2-1. PRINCIPAL COMPONENTS OF PA&E

ASD(PA&E)'s support staff includes the Assistant for Management, the Information Assistant, and the ACS. The Assistant for Management is responsible for personnel and studies management. The Information Assistant manages publications, correspondence, and the PA&E Document Control Library, while the Assistant for Computer Science manages automated information resources.

2.3 MANAGEMENT GOALS

2.3.1 Environmental Conditions

Changes resulting from transition from the Reagan Administration to the Bush Administration are still occurring within the Department of Defense. Even though

the ASD(PA&E) and his deputies are remaining in place, some of the other major players in OSD and the Services with whom they must coordinate are not yet in place or confirmed. As of May 1990, the Office of the Under Secretary of Defense for Acquisition [OUSD(A)] is going through a reorganization and still lacks several principal staff assistants that normally work closely with PA&E. The new Under Secretary of Defense for Policy [USD(P)] is substantially modifying the planning portion of the PPBS, which will affect PA&E's role in the overall PPBS process and its responsibilities in managing the programming portion of the PPBS process.

In addition to these organizational uncertainties, the entire national security environment is being radically altered by political and economic developments in the world, particularly in Europe and the Soviet Union. A rapidly changing Soviet threat accompanied by major force reductions in Europe is taxing DoD's ability to prepare new program plans to deal with the rapidly moving political and economic environment. PA&E is bearing the major burden of performing the required analysis and program planning.

The changing threat is also accompanied by concerns about an unacceptably large budget deficit. The resulting downward pressures on the Federal budget have already reduced defense expenditures. Headquarters support budgets for office automation and IT contracting are being cut, and further reductions are likely.

2.3.2 Importance of Goals for Information Resource Allocation

Management goals and objectives determine the priorities for performing mission functions and influence how resources are allocated to support functional responsibilities. Figure 2-2 portrays the general relationship between mission and management goals and how management goals provide direction to IT projects.

2.3.3 ASD(PA&E) Goals

The goals of the ASD(PA&E) are as follows:

- Improve defense programming by identifying impending program shortfalls and recommending timely solutions. A particular objective of the ASD(PA&E) is to improve tracking of each program so that program objectives and performance can be consistently assessed over time.

- Improve the quality of defense systems and processes. In this area, the ASD(PA&E) particularly seeks to develop and promote improved ways of doing business in planning and programming for national security, the
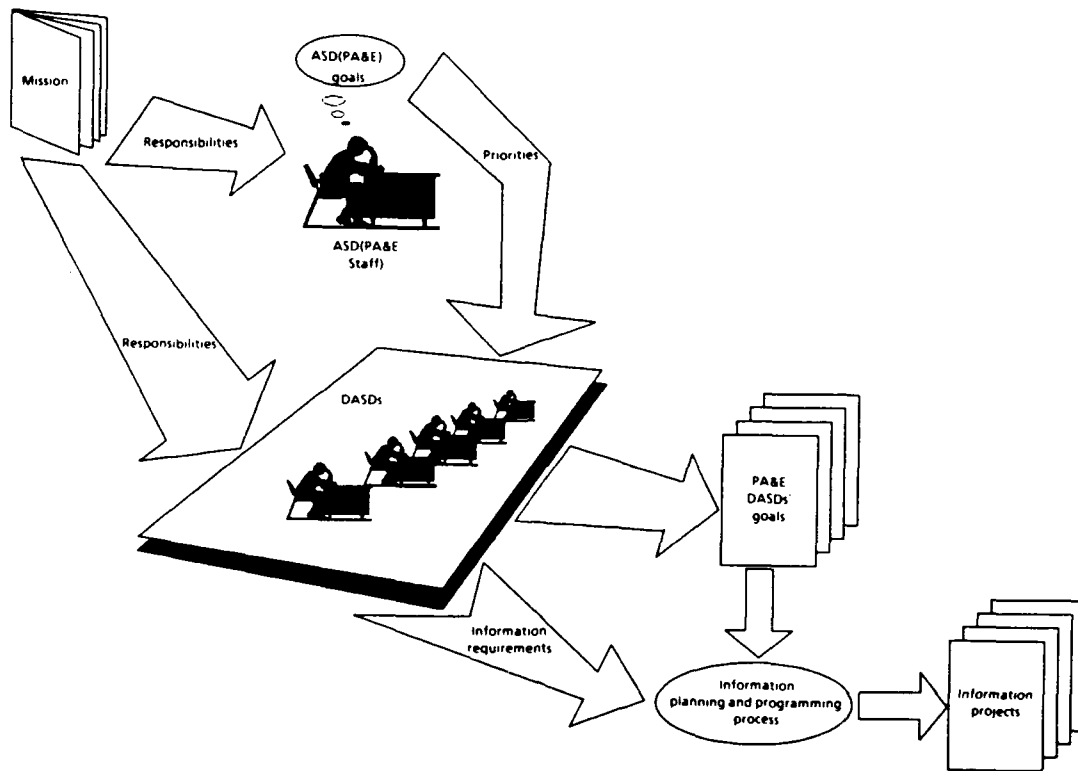
FIG. 2-2. INFORMATION SYSTEM PLANING LINKAGE

acquisition process, structuring military forces, and managing operations and support of weapon systems over their life cycles.

- Improve the ability of the national security community to participate in arms control negotiations by providing it with consistent, relevant, and up-to-date information.

- Identify and promote improved methods for analyzing the costs and benefits of defense programs.

2.3.4 Deputy Assistant Secretary Goals

The following subsections present the goals of the five DASDs in PA&E.

2.3.4.1 Principal DASD

The Principal DASD in PA&E has the following information resource allocation goals:

- Improve communications and coordination of documents within PA&E and between PA&E and other DoD organizations

- Improve tracking of defense budget programs, forces, and equipment inventories over time so that analysis of program issues is based upon consistently correct data

- Improve the control of information-processing resources that support PA&E requirements, particularly those that are provided by other organizations

- Improve the efficient allocation of PA&E personnel, IT, and studies resources by establishing organizational priorities reinforced with centralized management controls over related resource categories.

2.3.4.2 DASD(SP)

The DASD (Strategic Programs) has the following information resource allocation goals:

- Improve access to Single Integrated Operations Plan (SIOP) data used by the Joint Chiefs of Staff and national strategic target databases for strategic force analyses

- Develop and maintain computer modeling capabilities for technical analysis of strategic force effectiveness

- Improve the ability to analyze bomber/cruise missile program, particularly stealth options and bomber/tanker issues

- Improve capabilities for engagement analyses of evolving strategic defense systems architectures

- Improve responsiveness of strategic analyses by moving mainframe applications to microcomputers or minicomputers where feasible

- Improve capabilities to model effectiveness of strategic offensive forces for force modernization, strategic arms control, and nuclear weapons employment policy issues

- Establish capability for rapid development of new databases and computer programs to meet analytic requirements for evolving strategic offensive and defensive programs.

2.3.4.3 DASD(TA&P)

The DASD (Theater Assessment and Planning) has the following information resource allocation goals:

- Improve the ability to support arms control negotiations with accurate and timely force and weapon inventory data

- Improve the ability to measure and compare the effectiveness of forces for the United States and allied nations

- Improve the assessment of U.S. and allied mobilization and force projection capabilities under varied scenarios

- Improve the ability to recommend Program Planning Objectives (PPOs) that effectively describe appropriate priorities to the Military Departments and the Joint Staff (JS), and to conduct extended planning that promotes more effective allocation of defense resources over the long term

- Improve the ability to prepare and communicate documents and schedules within the TA&P office and between that office and the ASD(PA&E) Executive Office.

2.3.4.4 DASD(GPP)

The DASD (General Purpose Programs) has the following information resource allocation goals:

- Improve the ability to analyze alternative force structures across a variety of conflict scenarios and mission areas

- Improve cost and operational effectiveness analyses (COEAs) and publish standards and guidelines for Military Department COEAs

- Establish the ability to model land force scenarios and to improve tradeoff analysis across a broad spectrum of conflict environments for ground, air, and naval forces

- Improve the ability to consistently track general purpose programs, program budgets, forces, and weapons inventories

- Improve the ability to prepare and coordinate documents and schedules within the GPP Division and between that division and the ASD(PA&E) Executive Office.

2.3.4.5 DASD(RA)

The DASD (Resource Analysis) has the following information resource allocation goals:

- Improve the ability of the Defense Planning and Resources Board (DPRB) to assess tradeoffs within and between defense programs and assist in formulating program budget decisions (PBDs) that provide clear and timely program guidance on behalf of the Secretary of Defense

- Make available the highest quality cost estimates to decision makers and improve overall DoD cost analysis by making standardized cost data and estimating techniques available to the cost-estimating community

- Improve the ability to determine the cost of force options in support of arms control negotiations and global force restructuring and improve the ability to estimate operations and maintenance (O&M) support costs for weapon systems and for force packages across weapon systems

- Improve the ability to provide senior decision makers with program displays that illuminate the resource constraints binding on the DoD and the issues raised by those constraints

- Improve the quality and effectiveness of staff personnel.

SECTION 3

ANALYSIS OF COMMITMENTS AND PLANS

3.1 INTRODUCTION

The PA&E can be most effective in applying its information resources if it links information- and data-processing requirements and supporting IT to PA&E functions whose priorities have been established by mission goals (as shown in Figure 2-2). This section of the IRM plan discusses how well current information management supports PA&E mission functions and goals. It describes the classes of data that PA&E needs and the systems that support those information needs. We also highlight other existing and programmed technology resources, IT projects, and estimated resource requirements. In addition, we discuss the PA&E IRM planning and programming process. The last part of this section summarizes the issues and sets the stage for the IRM goals and objectives presented in Section 4. Related, but more detailed, information is presented in three appendices. Appendix A describes the policies, directives, and organizations governing the management of information in DoD. Appendix B describes the organization, structure, and responsibilities for IRM management in PA&E. Appendix C describes the relationship of PA&E programs, projects, and budgets to other OSD IRM programs.

3.2 REQUIRED DATA SUPPORT

The PA&E needs seven major categories of data:

- Program Objective Memorandum (POM), issue papers, and associated program review data

- Five Year Defense Plan (FYDP) budget data

- Weapons acquisition and O&M cost data

- Military forces and force-effectiveness-measures data

- Economic and industrial data used to measure the relationship of defense programs to the economy

- Staff management data associated with day-to-day operations

- National Strategic Target databases.

3.3   INFORMATION TECHNOLOGY

Mainframe computer support for PA&E, which was previously provided by the Honeywell MULTICS system, is now being provided by an IBM 3094 computer system under the Headquarters Systems Replacement Program (HSRP) named for the program that led to its selection. The HSRP computer, like its predecessor MULTICS, is managed by the United States Air Force (USAF) Seventh Communications Group (7CG) to support OSD and USAF Air Staff requirements. Unlike the MULTICS, which belonged to OSD, the HSRP system belongs to the Air Force. Only IT support organizations such as the 7CG and selected contractors have access to mainframe computers through 7CG networks. Organizations outside of PA&E have mainframe access — and, hence, mainframe network access — only from a few classified sites within PA&E.

The mainframe computer in PA&E supports several major, data-intensive applications.[1] One application stores and processes FYDP data received from the DoD Comptroller and supports preparation of the Secretary of Defense's Program Decision Memorandums (PDMs). The mainframe computer stores and processes military force data used to evaluate military force trends and effectiveness. In addition, it supports several modeling or simulation projects.

Modeling and simulation support to PA&E divisions is increasingly being provided for by minicomputers. They will be linked to users' desktop workstations initially through division local area networks (LANs) and ultimately through a PA&E-wide LAN.

Word processing support is changing from the use of Xerox Viewpoint to the use of Word Perfect on the MicroSoft Disk Operating System (MS-DOS). A growing number of personal computer (PC)-based information systems support individual analyst's needs.

The Assistant for Computer Science in PA&E has a workstation on the Comptroller's unclassified Xerox network, which links many IT managers to the

---

[1]A major, data-intensive application is one that requires more than microcomputing resources to support storage and manipulation of one or more large data sets.

Comptroller's Directorate of Systems and Services (DSS). That network is the only workstation network that provides access to OSD organizations outside of PA&E. PA&E LANs in operation, other than the 7CG mainframe nets, link the few Xerox computers within each office.

3.3.1 Configuration Management

The major challenge for configuration management is the transition to the HSRP. The second challenge is networking managers and analysts together to improve office automation and communications within PA&E. A third, growing challenge is achieving an appropriate balance between individual microcomputers and division minicomputers. Appendix D lists the major technologies that now support PA&E information requirements.

3.3.2 Standards

The development and application of standards in PA&E have been challenging because IT has evolved in response to the individual division's needs. Three major IT contracts are available to support OSD, and each has its own standards and protocols. Thus, interoperability between PA&E and other OSD offices is another challenge. In addition to the HSRP contract with Grumman Data Systems (GDS), the other available major contracts are the OUSD(A)'s Office Automation Secure Information System (OASIS) contract with Contel Corporation and the Office of the Assistant Secretary of Defense (Production and Logistics) [OASD(P&L)] Office Automation Computer System (OACS) contract with Electronic Data Systems (EDS) Corporation. The Comptroller's Xerox Viewpoint system is apparently going to be maintained under another separate contract with Xerox.

The PA&E and other OSD components recognize the need for conventions for exchanging and displaying graphic, database management system, and text-formatted data. The foregoing three contracts specify some minimally necessary standards:

- The OASIS and the HSRP contracts specify Transmission Control Protocol/Internet Protocol (TCP/IP) transmission protocols for interfacing with the Defense Data Network (DDN), as well as File Transfer Protocol (FTP) and Simple Mail Transfer Protocol (SMTP). The OACS already uses those protocols.

- Both OASIS and HSRP contracts require that mail data conform to the required format for (Defense) Advanced Research Projects Agency (ARPA) internet text messages.

- The OASIS and OACS will connect with the existing Xerox network in accordance with the Institute of Electrical and Electronic Engineers (IEEE) Standard 802.3, *Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications.*

Data formats and standards are followed *within* systems but not *between* systems. The FYDP data standards are well documented by the Comptroller, but program cost data and military force data standards are still in their infancy. PA&E is a major proponent of emerging data standards in these latter two areas.

3.4   INFORMATION SECURITY

Advances in computer technology have created opportunities and a strong user demand for sharing information, and that demand makes information security a difficult task. PA&E has the following potentially conflicting requirements for managing information:

- To ease access to data for users who need to see and manipulate the data to perform their duties, but to limit access to sensitive and classified data to those with appropriate clearance and need to know.

- To protect classified information from compromise by ensuring hardware, software, and telecommunications conform to National Computer Security Information Management (NACSIM) 5100 standards for automatic data processing (ADP) systems that process classified information. Expensive TEMPEST equipment should be restricted to systems handling special compartmented information and to systems for which risk analysis indicates the need for additional protection.

- To maintain security. To satisfy this requirement, the physical separation of dissimilar classified applications must be enforced until endorsed multilevel operating environments are available, even though that separation inhibits interoperability between OASIS, OACS and Xerox.

The PA&E is dealing with these three conflicting requirements (1) by appointing a security officer for each office suite who is responsible for examining the requirements and risks in each individual suite and (2) by publishing *PA&E Information Security Guidelines* and two security plans. One of these plans is the overall PA&E security plan and the other is the security plan for the PA&E computer site in Room 2D279 of the Pentagon. Both plans have been approved by the

Directorate for Personnel and Security, Washington Headquarters Service (WHS). Appendix E presents an overview of OSD security policy and procedures.

3.5   SOURCES OF INFORMATION TECHNOLOGY SUPPORT

Over the next 5 years, PA&E will procure most IT from the HSRP or the OSD-wide contracts mentioned earlier. The OASIS and the OACS contracts provide both a broad range of microcomputer hardware, software, and networking and also requirements analysis, training, maintenance, and other support services. PA&E also receives technical support from the 7CG, the Joint Data Systems Support Center (JDSSC), Federally Funded Research and Development Centers (FFRDCs), and contractors.

All IT acquisition in OSD is processed through the Comptroller's office DSS. The role of DSS in influencing OSD component programs and IT architecture is ambiguous, and that ambiguity has caused conflict among DSS, the 7CG, and the OSD component IT managers ever since DSS's predecessor organization was created in the early 1980s. We describe DSS's formal and informal roles in support of PA&E and other OSD components in Appendix B; however, a brief critique of its roles here can help place some of PA&E's IRM issues in perspective.

The predecessor to DSS, the Directorate for Computer and Office Automation Resources (DCOAR), was created by the Director of WHS to assume the burden of satisfying OSD IT budget requirements through WHS's Budget and Finance (B&F) Office. Since the proliferation of IT requirements that led to the creation of DCOAR reflected the rapidly growing importance of IT resources to the improved accomplishment of OSD mission functions, the OSD principal staff assistants came to view IT resources as theirs to manage and allocate. OSD component IT managers considered DCOAR an organization that processed IT requirements through to the Directorate for Supplies and Services, Washington (DSSW), and felt that too often it interfered with component managers' objectives. DCOAR staff, on the other hand, was attempting to control what it viewed as the chaotic proliferation of IT resources and systems. By FY89, IT resources had become the largest component of the OSD budget — larger even than personnel costs.

From DCOAR's creation until late 1988, OSD components tolerated DCOAR's attempts at IT management because of the power of the purse that lay behind DCOAR in the B&F Office and because of the unwillingness of OSD principal staff

assistants to come into conflict with the Director of WHS and the Comptroller. By FY88, however, OSD budget cuts were beginning to reverse the previous run of steadily increasing budgets, and principal staff assistants were beginning to complain. At that time, the Comptroller redesignated DCOAR as DSS, and moved its control from WHS to the OASD(C) Deputy Comptroller (IRM).

The DSS is using its higher level sponsorship to control the allocation of OSD IT resources more firmly. It is now publishing Administrative Instruction 56, *OSD Automated Information Resource Management (AIRM)*, its first formal administrative instruction, and it is in the process of publishing other, less formal policy documents that provide tighter controls over OSD component, planning, programming, and budgeting processes. In addition, DSS is planning to increase central, contract support services to replace separate, component-managed contract services. DSS is also planning to exert greater central control over 7CG resources by renegotiating the 7CG-OSD memorandum of understanding (MOU) for IT support.

Although all of DSS's initiatives will have a significant impact on PA&E's ability to manage its information resources, the most significant initiative from an IRM planning perspective is a new requirement for OSD components to rationalize their IT project requirements in accordance with a new set of OSD IRM programs. Component IT managers are currently preparing AIS life-cycle management (LCM) plans that describe to DSS how components plan to manage information systems over their life cycles.

Support from 7CG to PA&E, like 7CG support to all other OSD components, is largely provided in the form of a group of analysts and managers who are dedicated to direct support of the organization. PA&E's support division (designated GNP) consists of about 10 persons, commanded by a lieutenant colonel. This division is divided into three branches, which support resource analysis (GNPR), network systems (GNPN), and operations research and modeling (GNPM). The Resource Analysis Branch is dedicated to supporting the DASD(RA)'s divisions. GNPN and GNPM provide general support across PA&E. The majority of the modeling support is provided to the DASD(GPP) divisions since they have no contractor support. GNP's parent organization, GN, supports all OSD components. The GN commander would prefer to allocate resources in general support of OSD components rather than dedicate them in direct support. Renegotiation of the 7CG-OSD MOU may move 7CG support in the direction of general support, and general support will require more

planning and centralized management of all PA&E support resources by PA&E managers.

As the smallest set of external support resources, the Defense Communications Agency (DCA) Joint Data Systems Support Center (JDSSC) provides highly classified processing support for PA&E. This JDSSC support, which amounted to over $1 million a year in past years, is now being reduced to transfer JDSSC contracted services to PA&E's direct control. JDSSC will still provide the essential data storage, collation, and aggregation of sensitive data services that cannot be released to PA&E contractors in their original form.

3.6 RESOURCE ALLOCATION

PA&E spent more than $17 million on nonstaff information resources in FY89 and planned to spend slightly more in FY90 — $11 million for IT O&M, $4 million for IT procurement, and over $3 million for studies. In the past, many studies provided IT-related products such as automated databases and models. Although recent budget cuts reduced overall OSD FY90 spending, PA&E lost only some of its study funds; its IT budget remains at $11 million and $4 million for O&M and procurement, respectively. Study funds have been reduced to just over $2 million for FY90. Table 3-1 shows the major procurement and O&M categories under which PA&E is spending FY90 IT funds.

Table 3-1 does not reflect how these resources support PA&E mission functions or IRM programs. Nevertheless, it does show the large outlay for microcomputers and minicomputers that are beginning the transition from mainframe to workstation support. Table 3-1 also shows the large allocation of O&M funds to contractor support. The table does not reflect the further allocation of about 30 percent of these contractor funds to the MULTICS/HSRP conversion.

Table 3-2 summarizes how O&M resources support PA&E offices and OSD IRM programs. It aggregates projected FY91 O&M expenditures for projects described in Appendix C. Table 3-2 cross-tabulates project budget totals that support DASD offices and that are associated with OSD IRM programs and AISs.

The ratio of contractor support personnel to total PA&E staff is approximately 1:2 and is much larger than for any other OSD component. Excluding those PA&E divisions that are not supported by contractor staff, the actual ratio in those offices

TABLE 3-1

PA&E INFORMATION TECHNOLOGY BUDGET IN FY90

Budget areas	Budget ($ millions)
Procurement	
Microcomputer hardware	2.00
Microcomputer software	1.00
Minicomputers	1.00
Total procurement	4.00
Operations and maintenance	
UNISYS contract for the Defense Analysis and Management Information System (DAMIS)	3.60
General Research Corporation (GRC) contract for DAMIS	1.40
GRC contract to support the Projection Forces Division	.45
Scientific Applications International Corporation (SAIC) contract to support strategic programs	1.40
7CG memorandum of agreement (MOA) for mainframe support	1.50
Economic databases	.38
Economic Analysis Artificial Intelligence contract	.42
CENTEC contract for HSRP conversion	.60
General IT support	1.25
Total O&M	11.00
Grand Total	15.00

that are supported is close to 1:1. Although a large proportion of contractor support that is now dedicated to the MULTICS/HSRP conversion will not be required after FY93, the migration of many applications from the mainframe to desktop workstations will increase the need for desktop processing support by contractors.

Desktop processing support is now being provided by the 7CG, principally by the GNPM branch. However, the six members of that branch cannot adequately support the growing desktop support requirements, and the transition of 7CG to a

TABLE 3-2

FY91 O&M BUDGET TOTALS BY OSD AIS AND PA&E OFFICE

(Estimated; in $ thousands)

PA&E Offices	OSD IRM program AIS[a]								
	1.1	1.4	2.1	2.4	3.1	3.2	3.3	Total	% of total
Theater Assessments and Planning	877	418	1,172	2,369	1,210	0	560	6,606	55
Strategic Programs	357	0	368	1,103	0	365	0	2,193	18
Resource Analysis	0	0	1,002	874	207	0	0	2,083	17
General Purpose Programs	0	0	300	818	0	0	0	1,118	9
Total	1,234	418	2,842	5,164	1,417	365	560	12,000	
% of total	10	3	24	43	12	3	5		

[a] OSD IRM programs and their supporting AISs are described in Appendix C. The relevant IRM programs related to PA&E IRM projects are: 1. DoD Policy and Planning, 2. DoD Resource Management, and 3. DoD Acquisition Policy. The relevant OSD AISs supporting these IRM programs are: 1.1 DoD Political-Military Planning, 1.4 DoD Net Assessments, 2.1 DoD Financial and Resources Management, 2.4 DoD Forces, Program and Cost Analysis; 3.1 Acquisition Management and Oversight, 3.2 Research and Engineering, 3.3 Production and Logistics.

general support role will make desktop support even less adequate. More effective use of the extensive contractor support could provide the solution to this problem.

Studies that recommend IT products or processes are an important set of sources of new IT requirements. Study requirements, however, are not integrated with IT requirements. Furthermore, a number of studies appear to support IT requirements, and some IT projects appear to be directed at basic research and data collection. Clearly, some studies will lead to requirements for new IT products or systems.

3.7 INFORMATION RESOURCE MANAGEMENT PLANNING AND PROGRAMMING

3.7.1 The IRM Process

The IRM process within PA&E is characterized by compartmented management of resources. PA&E's primary sources of ADP support are the 7CG, contracts for IT support, and IT-related study contracts. Although the Assistant for Computer Science (ACS) in PA&E is responsible for overall consolidation of IT requirements and allocation of IT funds, the three large IT contracts (with GRC, SAIC, and UNISYS) are each budgeted for and managed by separate division activities, as are the IT-related study contracts. The ACS manages the contract for general IT services and the general PA&E aspects of the MULTICS/HSRP contract support, with direct support from 7CG. The Information Assistant in PA&E manages its only document storage and retrieval system (DS&RS). Although limited technology is applied to DS&RSs now, future growth is planned.

All PA&E activities submit IT requirements to the ACS for consolidation before they are sent to the Deputy Comptroller (IRM), DSS. DSS budgets a lump sum for PA&E and the ACS, in turn, allocates the budgeted sum among the requesting activities in proportion to the original requirements. Budget execution and project implementation are highly decentralized to the requesting activities.

3.7.2 IRM Support for Management Goals

The compartmented management of ADP in PA&E has resulted in a collection of individual systems that have not been designed to share data or support a variety of applications. With the exception of DAMIS and those MULTICS/HSRP applications in support of the program review process, most other PA&E information resources have been allocated to meet the requirements of mid-level managers, individual analysts, and support staff. Because the DASD(TA&P) Assistant for Planning, who is the DAMIS manager, has been assigned responsibility for developing applications that have been requested by the ASD(PA&E) or by Congress, DAMIS now absorbs more budget resources (almost $6 million in FY90) than any other activity, including 7CG support. DAMIS also supports the rapidly growing data requirements of the arms control process. Despite this massive concentration of

resources, DAMIS is managed at a level that limits the most effective allocation of these resources.

The IRM focus needed to support management goals can be described in terms of shortfalls in four areas: the IRM process itself, data, analytical data processing, and IT hardware configuration and standards.

The compartmenting of contract management and budget execution has already been highlighted. Despite the millions of dollars PA&E spends annually for contractor support, some analytical needs are not being adequately addressed within the present system of compartmented management of 7CG and IT contractor resources. Only within individual projects can the workload be leveled. Furthermore, the compartmented management of information resources does not lend itself to adequate oversight of project managers. IRM planning and programming is also experiencing difficulties because of the highly decentralized management structure. For example, attempts to allocate recent budget cuts among division activities have clearly indicated the absence of overall organizational priorities, or even a set of corporate goals and objectives. IRM management needs to be centralized to ensure tighter coordination between activities and increased oversight of multimillion dollar IT contracts and IT-related studies. IRM also needs to be driven by a comprehensive set of management goals and priorities.

In speaking of a data shortfall, we do not mean that data do not exist but rather that existing data are not available in the right form at the right place and time. In other words, the shortfall of which we speak is in reality a deficiency in data collation and distribution. The most obvious example is the failure of FYDP data to be available to PA&E managers and analysts when they need them — despite their availability to managers and analysts in the Comptroller. Even though the Comptroller organization is the central source of FYDP data, PA&E staff and managers access FYDP data from two separate data extraction processes within PA&E and in one case from the OUSD(A). Up-to-date FYDP data are not accessible for analysis in machine-readable form at professional workstations, nor can they be used in word processors to facilitate production of the documents associated with the program budget process. PA&E action officers and middle managers must rely upon labor-intensive manual processing of these data during the most time-sensitive parts of the programming and budgeting process. Another significant problem is that no central source of consistent FYDP data is available for evaluating the execution of

defense programs. The ASD(PA&E)'s requirement to develop an FYDP tracking system is an attempt to solve this problem. Management of the FYDP tracking system and other corporate databases needs to be centralized to provide more effective PA&E-wide support.

Shortfalls in IT-related analytical capabilities rank next to data shortfalls as serious obstacles to the accomplishment of goals and objectives. Most mission functions require sophisticated analysis of data — some aspects of which have only recently become possible with new information technologies. For the most part, however, the IT-related analytic shortfalls consist of gaps in the training and education of the PA&E staff. The staff is well-versed in the technical aspects of the weapon systems they evaluate and in the substantive analysis of procurement, logistics, or costing. However, they are not usually proficient in using the power of the information technologies now becoming available to them. Most analytical functions require some use of IT tools such as spreadsheets, statistical software, or decision support models, which, although generally available, are beyond the experience of most staff analysts and managers.

This shortfall of IT-related analytical ability is currently being filled with extensive contractor support. As new IT is provided to staff desktop workstations, the staff should have less need for such extensive support. Although PA&E managers and staff analysts argue that they do not have enough time to do the data collation and presentation that contractors now provide, the technology appears to be moving in the direction of allowing them to integrate data collation, analysis, and presentation. To an important extent, data collation and presentation are significant components of analysis. Training PA&E staff analysts to effectively use new IT on their workstations will improve their productivity and conserve contractor support resources for more cost-effective applications.

The most serious IT hardware shortfall is experienced in data communications within and among PA&E components. The specific aspects of that problem are compatibility among different systems and the limitations on networking created by the need for communications security. The other major shortfall in IT hardware is the difficulty in making the transition from the MULTICS to the HSRP systems. This difficulty appears to revolve about (1) the inadequate assessment of user requirements, (2) the lack of workstation and communications facilities for PA&E contractors to use for converting databases and software applications, and

(3) limitations in the HSRP system software. Transition difficulties are being slowly resolved by shifting some databases and applications to division microcomputers and minicomputers outside of the HSRP and at the same time concentrating on only the mission-essential applications for software conversion. Another IT shortfall is seen in the difficulty experienced in integrating word processing and data analysis within the Xerox Viewpoint system. The ACS is remedying that shortfall by changing from the Xerox Viewpoint system to MS-DOS microcomputers for word processing and office automation. Finally, IT is unevenly distributed across PA&E. The DAMIS, Strategic Programs, and Force Projection divisions are well-endowed with IT resources, whereas the Resource Analysis divisions are only moderately equipped. The General Purpose Programs divisions are poorly equipped with IT resources, but are well-endowed with studies resources.

SECTION 4

THE 7-YEAR INFORMATION RESOURCE MANAGEMENT PLAN

4.1   PURPOSE AND SCOPE

4.1.1   Purpose

This IRM plan establishes overall goals and objectives for managing PA&E information resources during the period FY91 through FY96. These goals and objectives are aimed at solving the deficiencies noted in Section 3. The plan should be implemented in two phases. In Phase 1, PA&E will focus on providing more timely access to FYDP data, implementing the transition from Xerox Viewpoint to MS-DOS office automation architecture, and minimize the impact of the MULTICS/HSRP conversion on PA&E. In Phase 1, the management of information resources should also be concentrated in a more centralized organization. In Phase 2, the plan calls for the establishment of a standardized systems architecture for FY92 through FY95. That architecture should truly integrate information processing throughout PA&E and facilitate information interchange with other parts of OSD, JS, Military Departments, and intelligence agencies.

4.1.2   Scope

With this IRM plan, the ASD(PA&E) establishes overall IRM goals and objectives, issues 5-year IT budget guidelines, and sets the direction for supporting PA&E mission functions through FY95. These IRM goals and objectives reflect management goals described in Section 2 and IRM programs described in Appendix C. This plan describes the planning and programming of Phase 1 activities in some detail; it presents only general guidelines for Phase 2.

4.2   INFORMATION RESOURCE MANAGEMENT
GOALS AND OBJECTIVES

- *Goal 1*: Centralize management of information resources.

    ▶ *Objective 1.1*: Reassign the DASD(TA&P) Assistant for Planning as the Director for IRM (DIRM) with responsibility for management of all PA&E data and automated information resources.

    ▶ *Objective 1.2*: Assign the ACS to the Directorate for IRM as the Deputy Director for Automated Information Resources Management (AIRM), with responsibility for managing all IT resources within PA&E.

    ▶ *Objective 1.3*: Assign the Information Assistant to the Directorate for IRM as the Deputy Director for Data Administration, with responsibility for data standards, storage, and retrieval.

- *Goal 2*: Improve the processing and dissemination of information among PA&E managers, staff, and contractors.

    ▶ *Objective 2.1*: Develop an integrated PA&E network strategy and schedule early in Phase 1 for secure interconnectivity among

      – Workstations within office suites.

      – Data-intensive major AISs and the component workstations.

    ▶ *Objective 2.2*: Establish intraoffice LANs.

    ▶ *Objective 2.3*: Establish an PA&E LAN that links intraoffice LANs.

    ▶ *Objective 2.4*: Prepare and disseminate a directory of information resources that identifies available databases, models, and IT resources (hardware and software) that may satisfy multiple requirements.

- *Goal 3*: Improve the processing and dissemination of information between PA&E and other organizations.

    ▶ *Objective 3.1*: In cooperation with other OSD components, recommend modifications to current PPBS data and their flow to improve OSD components' capabilities to better integrate the strategic planning, programming, budgeting, and weapon acquisition processes with each other by the end of Phase 2.

    ▶ *Objective 3.2*: Establish network connection from the PA&E LAN to the LANs of the Office of the Under Secretary of Defense (Planning) [OUSD(P)], OUSD (Acquisition), and the Comptroller to allow analyst-to-analyst transfer of files.

▶ *Objective 3.3*: Expand the availability of Program Review Electronic Delivery System/Standardization of Program Review Information Network Technologies (PEDS/SPRINT) to all PA&E office LANs.

▶ *Objective 3.4*: Extend the PEDS/SPRINT application to documents other than program review press documents.

● *Goal 4*: Improve access to, and management of, corporate databases.

▶ *Objective 4.1*: Assign the Directorate for IRM responsibility for managing all IT resources within PA&E and coordinating the effective allocation of supporting resources from outside PA&E.

▶ *Objective 4.2*: Assign the Directorate for IRM responsibility for management of all PA&E data resources.

▶ *Objective 4.3*: Develop a Corporate Data Management Plan that links information processing applications using corporate data to PA&E mission functions and management goals and assigns data management responsibility for corporate databases that serve multiple applications.

▶ *Objective 4.4*: Establish a DS&RS that makes FYDPs, program review and budget decision documents, studies, National Security Decision Memoranda, intelligence planning documents, and other archival materials available to managers and analysts via the PA&E LAN.

● *Goal 5*: Accelerate the integration of program and budget data processing into data analysis and document preparation.

▶ *Objective 5.1*: Provide appropriate extracts of data from the Military Department POM and FYDP databases to PA&E staff offices on workstation-readable storage media in a timely manner by the end of Phase 1.

▶ *Objective 5.2*: Provide program budget data to PA&E staff offices in a medium that will allow the PA&E staff to transfer selected data elements into the LAN processing environment by the end of Phase 2.

▶ *Objective 5.3*: Enable Program Decision Memorandum (PDM) papers to be prepared and coordinated in a secure LAN processing environment compatible with PA&E workstation software by the end of Phase 2.

- *Goal 6*: Ensure AIS security.

    ▶ *Objective 6.1*: Ensure information systems comply with DoD standards for secure communications.

    ▶ *Objective 6.2*: Update PA&E security plans.

    ▶ *Objective 6.3*: Implement a strategic plan for LAN security using network encryption technology and trusted network software, minimum of command and control (C2) level, by the end of Phase 2.

- *Goal 7*: Promote the balanced use of new information technologies to control cost growth and improve the effectiveness of information processing throughout the acquisition process.

    ▶ *Objective 7.1*: Train at least one technology proponent in each division in the use of software available to enhance information processing in the office. This program should allocate at least 80 hours of appropriate training each year to each division. Division chiefs should institute training programs to allow analysts to integrate new IT-related analytical capabilities into their normal functions.

    ▶ *Objective 7.2*: Reduce reliance on contractor support for IT-related analytical applications that should be absorbed by PA&E staff analysts. Reallocate contractor support to provide those O&M services that are least closely related to their daily analytical functions, such as IT maintenance, model development, and report production.

    ▶ *Objective 7.3*: Coordinate with the 7CG commander the use of the 7CG Information Center facilities for identifying and testing new technologies, especially those integrating PA&E AIS resources with 7CG support systems (e.g., HSRP).

    ▶ *Objective 7.4*: Establish standards for evaluating the cost-effectiveness of applying information technologies and include them as an appendix to the next IRM plan.

- *Goal 8*: Satisfy requirements for data management and computational resources that exceed the capability of individual workstations, with maximum feasible use of large-scale resources already available in OSD, JS, and nearby DoD agencies. Provide appropriate levels of access to such resources within PA&E.

    ▶ *Objective 8.1*: Acquire the models required by GPP divisions to model and simulate ground, air, and naval combat scenarios, with necessary supporting divisional computing resources.

    ▶ *Objective 8.2*: Identify requirements for data modeling and analysis that appear to need large-scale resources. Establish arrangements to use

appropriate data modeling and analysis capabilities of other organizations or migrate applications to microcomputer or minicomputer workstations before allocating further resources to mainframe support.

4.3   LONG-TERM INFORMATION RESOURCE MANAGEMENT STRATEGY

4.3.1   Recommendations to Meet Goals and Objectives

The realization of each objective – and, thus, each goal – cited in Section 4.2 requires specific implementing actions. Tasks, milestones, and target dates for completing the actions required to achieve objectives should be prepared to meet the IRM goals.

4.3.2   Target Architecture

Figure 4-1 represents PA&E target architecture for the FY92 through FY96 period. By the end of FY92, the architecture will permit electronic exchange of documents and data among PA&E components at the workstation level.

The major components of the target PA&E architecture are:

- *Network management centers.* A network management center (NMC) will support local area networking, database, and communication needs for both classified and unclassified processing for the entire PA&E staff. Advances in technology will allow multilevel security across the PA&E network by the end of Phase 2.

- *Information management centers.* Information management centers (IMCs) in the document control library and in Room 2D279, the Pentagon, will integrate information, collate it, disseminate it to multiple receivers, and archive it. IMCs will be a part of the PA&E LAN.

- *System management centers.* Each office suite will be a system management center. A system administrator within each suite will coordinate IT support for that suite, manage internal networking, and ensure security implementation.

- *Workstations.* Workstations will integrate analysis, word processing, decision support, and data access within a hypertext environment. Most medium-scale processing capabilities will also have migrated to these workstations by the mid-1990s.
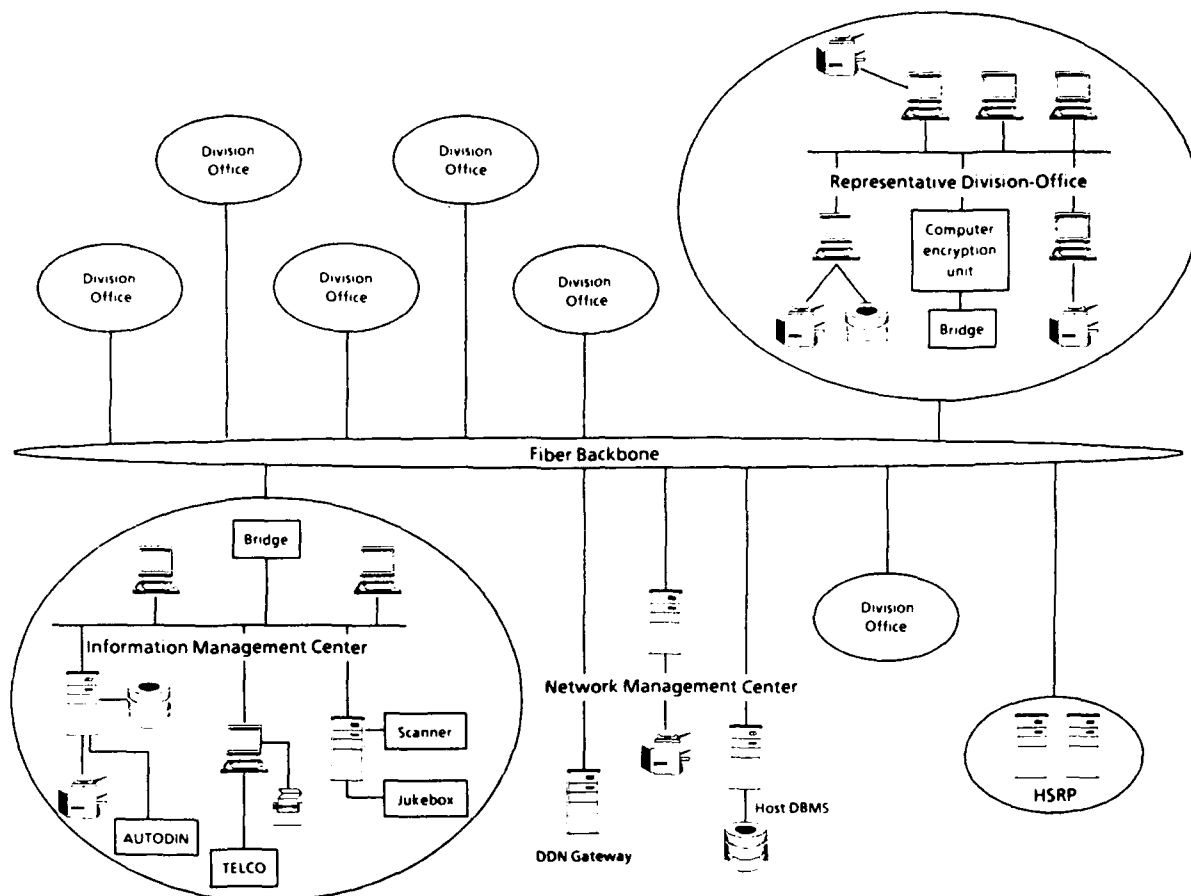
Note: AUTODIN = Automated Digital Network, TELCO = Telephone company, DBMS = Database Management System

FIG. 4-1. PA&E INFORMATION TECHNOLOGY ARCHITECTURE

- *Large-scale processing facilities.* The principal external data processing facility supporting PA&E will be 7CG computers. Some major PA&E AISs and models will be supported. Powerful minicomputers in Room 2D279, the Pentagon, will support some applications that formerly required larger scale processing facilities.

- *Mass storage and retrieval devices.* A DS&RS will be established on the PA&E LAN to allow controlled access to program review and other corporate documents.

- *OSD wide-area, broadband communications backbone.* A broadband backbone will be capable of handling all forms of information. Gateways will still be used to link users to other networks and outside systems, but common adoption of open system interconnection (OSI) standards will allow PA&E access without any need for specialized gateways. This communications backbone will be managed by DSS. The JS will provide OSD components with distributed message processing and secure voice transmission. The 7CG or the DCA will continue to be responsible for

4-6

operation and maintenance and will retain operational responsibility for large-scale processing resources tied to the backbone.

4.3.3 Acquisition Strategy

The PA&E will primarily develop its information resource architecture through an evolutionary acquisition strategy. The essential characteristic of evolutionary acquisition is that system definition evolves in stages and is based on long-term requirements, OSD-wide standards, and emerging technologies. This process is appropriate for the PA&E information resource architecture because the major components that will be adopted, developed, expanded, or replaced during the period of this plan include computer security, information standards, communications, and mass storage devices – areas in which technology is likely to change during this acquisition period.

The PA&E has already begun the procurement by acquiring MS-DOS 386-technology microcomputers for all managers, analysts, and clerical staff. Further IT acquisition in Phase 1 can be made from the OASIS or OACS contracts. They will provide vehicles for procuring computer equipment that will ease interoperability among PA&E divisions and between PA&E and other OSD components.

4.3.4 Suggested Schedule for Completing Initiatives

The OSD IRM plan sent to Congress in May 1988 included projected timing for completion of initiatives that support some OSD objectives that are closely related to PA&E objectives. Figure 4-2 shows the OSD schedule for completing its initiatives. The schedule projects the establishment of OSD interoperability standards and the completion of an OSD data management plan in FY90. These initiatives are of particular importance to PA&E since data management and AIS interoperability are areas to which the organization will commit significant resources. A schedule that PA&E should follow to complete initiatives that support its IRM goals is shown in Figure 4-3.

OSD initiative to support IRM objective	Fiscal years						
	89	90	91	92	93	94	95

Phase 1 ← 89–90 → ← Phase 2 → 91–95

#	Initiative	Annotations
1.1	Acquire low-cost workstation	
1.2	Perform decision support system requirements analysis	Upgrade for OA '95 RFP
1.3	Perform decision support system acquisition	
1.4	Automate message distribution	Upgrade for OA '95 RFP
1.5	Prepare RFP for FY95 OA	RFI (93), RFP (95)
1.6	Complete OACS	
1.7	Develop OA secure LAN[a]	Technical update
1.8	Replace Datapoint[b]	
2.1	Identify common processes and data	Revise as needed
2.2	Establish interoperability standards	
2.3	Complete interoperability plan	Review for OA '95 RFP; Upgrade for OA '95 RFP
2.4	Establish backbone OSD network	
2.5	Develop OSD data management plan	Revise annually
2.6	Develop information resources directory	Revise annually
3.1	Prepare an updated AI26	Revise as needed
4.1	Establish a common training facility	Review requirements; Integrate into OA '95
5.1	Establish IRM plans for components	Revise annually
5.2	Issue an updated AI56[c]	Revise as needed

Notes: AI = administrative instruction; RFI = request for information; RFP = request for proposals; OA = office automation.
[a] Secure office automation local area network (contract awarded March 1989 for 8-year life cycle).
[b] Datapoint system to be replaced out of OACS and/or OA secure LAN contracts.
[c] Assuming an initial update will be completed in FY89.

FIG. 4-2. PROPOSED OSD STRATEGIC INITIATIVES SCHEDULE
(From OSD IRM plan sent to Congress in May 1988)

Fiscal years

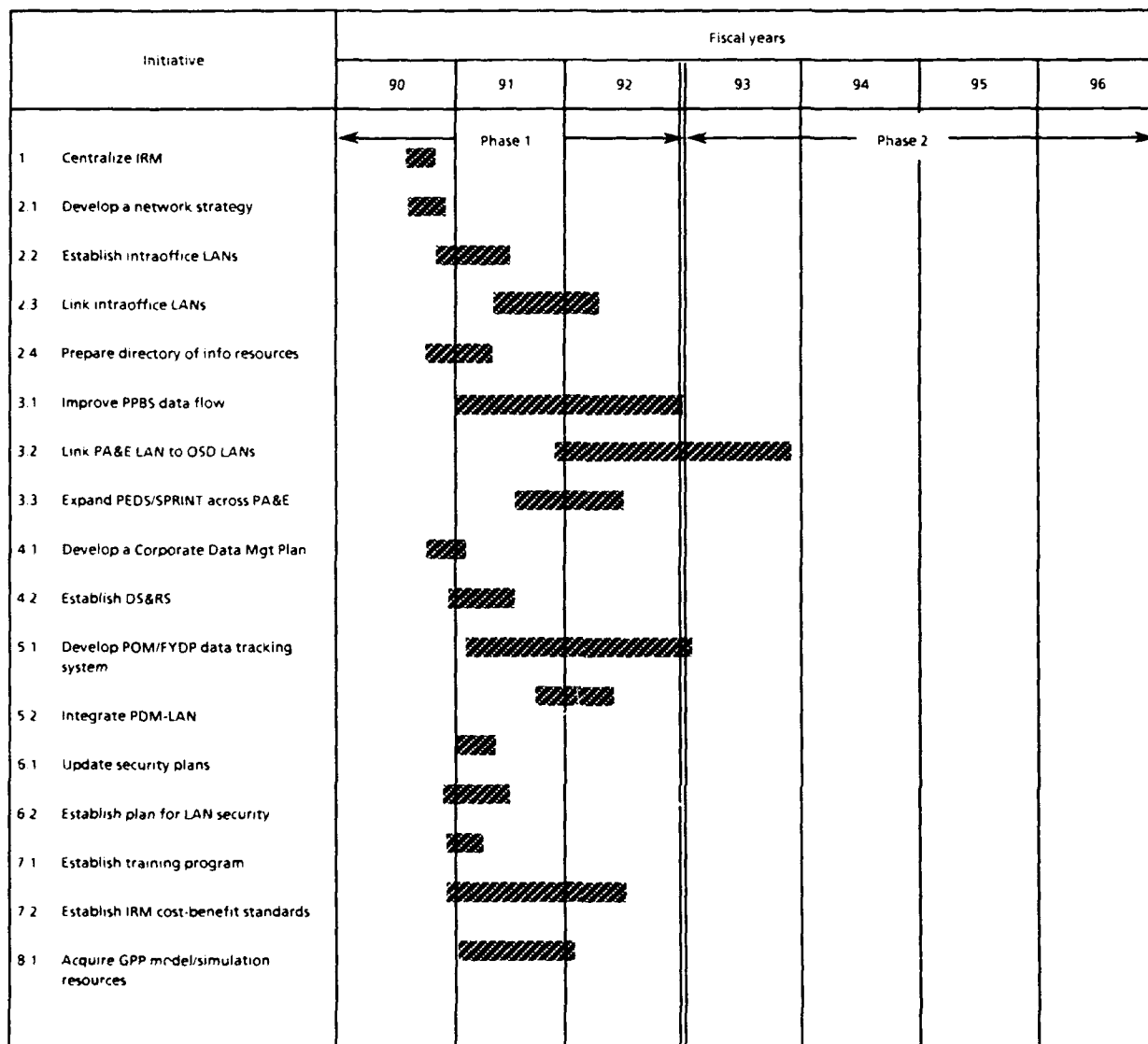| Initiative	90	91	92	93	94	95	96
	← Phase 1 →			← Phase 2 →			
1 Centralize IRM							
2.1 Develop a network strategy							
2.2 Establish intraoffice LANs							
2.3 Link intraoffice LANs							
2.4 Prepare directory of info resources							
3.1 Improve PPBS data flow							
3.2 Link PA&E LAN to OSD LANs							
3.3 Expand PEDS/SPRINT across PA&E							
4.1 Develop a Corporate Data Mgt Plan							
4.2 Establish DS&RS							
5.1 Develop POM/FYDP data tracking system							
5.2 Integrate PDM-LAN							
6.1 Update security plans							
6.2 Establish plan for LAN security							
7.1 Establish training program							
7.2 Establish IRM cost-benefit standards							
8.1 Acquire GPP model/simulation resources							

FIG. 4-3. PROPOSED PA&E STRATEGIC INITIATIVES SCHEDULE

4.3.5 Management Methods

The strategy for continuing progress in managing information resources through 1995 should rely on the following approach:

- Involve senior management in IRM planning and programming.

- Develop a target IRM architecture that will meet PA&E's goals and objectives and maintain that architecture as a living structure for planning that can change to meet new circumstances. Section 4.3.2 recommends an

initial target architecture. Ensure the long-range plan for each AIS includes compatibility with standards used in the architecture.

- Establish a review program in coordination with the PPBS to measure IRM accomplishments annually against IRM goals and objectives. Update the IRM plan to reflect that review.

- Ensure spending for IT resources matches the projects for which funds were requested and that out-of-cycle priority requirements receive appropriate senior management review.

4.4   REVIEW PROCESS

The annual review of this plan will determine how well PA&E is meeting selected IRM goals and objectives; complying with established IRM policies, procedures, principles, standards, and guidelines; and meeting the responsibilities specified in 4 United States Code (U.S.C.) 3506, assuring delegation of proper levels of acquisition authority for ADP resources.

Using mission goals set by the ASD(PA&E) and further refined by deputies, the Director for IRM can determine what information is needed to accomplish ASD(PA&E)'s mission goals. After a review of existing information resources and approved IT projects, the Director for IRM can determine requirements for additional automated support to meet mission information needs. The review of existing resources should include a review of the status and plans for each major AIS and a review of the past year's expenditures for each IT project to which funds were allocated. As a result of the annual review, the Director for IRM should develop and coordinate the following with the PA&E staff in accordance with Appendix B:

- IRM goals and objectives

- A strategy for achieving the goals and objectives and for managing PA&E AISs

- Areas in which present commitments and planned AISs fail to meet mission needs

- Priorities for a set of IT projects that will be the POM submission and a list of studies that will produce IT-related recommendations or IT products.

GLOSSARY

AAW	=	antiair warfare
ADP	=	automatic data processing
ADS	=	automatic data systems
AI	=	Administrative Instruction
AIRM	=	automated information resource management
AIRMRC	=	AIRM Review Council
AIS	=	automated information system
ACS	=	Assistant for Computer Science
AMORD	=	Advanced Mission Oriented Display
ARPA	=	(Defense) Advanced Research Projects Agency
ASCM	=	Antiship Cruise Missile
ASD	=	Assistant Secretary of Defense
ASOSM	=	A Submarine on Submarine Model
ASD(PA&E)	=	ASD (Program Analysis a⁻d Evaluation)
ASW	=	antisubmarine warfare
B&F	=	Budget and Finance (Office)
BES	=	budget estimate submission
BR	=	basic research
CAIG	=	Cost Analysis Improvement Group
CAS	=	Cost Analysis System
C2	=	command and control
C3I	=	command, control, communications and intelligence
CFE	=	Conventional Forces in Europe (Treaty)

CINCs	=	Commanders in Chief of the Unified and Specified Commands
COEA	=	cost and operational effectiveness analysis
COMSEC	=	communications security
CSMA/CD	=	Carrier Sense Multiple Access with Collision Detection
DAB	=	Defense Acquisition Board
DAMIS	=	Defense Analysis and Management Information System
DASD	=	Deputy Assistant Secretary of Defense
DASD(GPP)	=	DASD for General Purpose Programs
DASD(RA)	=	DASD for Resource Analysis
DASD(SP)	=	DASD for Strategic Programs
DASD(TA&P)	=	DASD for Theater Assessment and Planning
DB	=	database
DCA	=	Defense Communications Agency
DC(IRM)	=	Deputy Comptroller (Information Resource Management)
DCOAR	=	Directorate for Computer and Office Information (now DSS)
DDN	=	Defense Data Network
DEIMS	=	Defense Economic Impact Modeling System
DIRM	=	Director for Information Resource Management
DoDC	=	Department of Defense Comptroller
DoDD	=	Department of Defense Directive
DPG	=	Defense Planning Guidance
DPQ	=	Defense Planning Questionnaire
DPRB	=	Defense Planning and Resources Board
DRB	=	Defense Resources Board
DS&RS	=	document storage and retrieval system
DSS	=	Directorate of Systems and Services

DSSW	=	Directorate for Supplies and Services, Washington
DUSD	=	Deputy Under Secretary of Defense
EDS	=	Electronic Data Systems
EUC	=	end user computing
FFRDC	=	Federally Funded Research and Development Center
FIRMR	=	Federal Information Resources Management Regulation
FTP	=	File Transfer Protocol
FYDP	=	Five Year Defense Plan
GAS	=	General ADP Support
GDS	=	Grumann Data Systems
GEOSYS	=	Geographic Plotting System
GFP	=	ground force programs
GPP	=	General Purpose Programs
GOLEM	=	Generic Operations Logistics Estimating Model
GRC	=	General Research Corporation
HSRP	=	Headquarters Systems Replacement Program
IDA	=	Institute for Defense Analyses
IEEE	=	Institute of Electrical and Electronic Engineers
IMC	=	information management center
IRM	=	information resource management
IRMO	=	Information Resource Management Officer
IRRC	=	Information Resource Review Council
IT	=	information technology
JCS	=	Joint Chiefs of Staff
JDSSC	=	Joint Data Systems Support Center
JMOM	=	Joint Model of Models
JS	=	Joint Staff

JSTARS	=	Joint Surveillance Target Attack Radar System
LAN	=	local area network
LCC	=	life-cycle costing
LCM	=	life-cycle management
MOA	=	memorandum of agreement
MOE	=	measure of effectiveness
MOU	=	memorandum of understanding
MPSO	=	major principal staff office
MS/DOS	=	Microsoft Disk Operating System
NACSIM	=	National Computer Security Information Management
NATO	=	North Atlantic Treaty Organization
NCR	=	National Capital Region
NED	=	NATO Economic Database
NFP	=	naval forces program
NMC	=	network management center
NTSSC	=	National Technical Systems Security Committee
O&M	=	operations and maintenance
OA	=	office automation
OACS	=	Office Automation Computer System
OASD	=	Office of the Assistant Secretary of Defense
OASD(C)	=	Office of the Assistant Secretary of Defense (Comptroller)
OASD(PA&E)	=	OASD (Program Analysis and Evaluation)
OA Secure LAN	=	Office Automation Secure LAN
OASIS	=	Office Automation Secure Information System
OC	=	Office of the DoD Comptroller
ODASD(C/MS)	=	Office of the DASD (Cost/Management Systems)

ODC(IRM)	=	Office of the Deputy Comptroller (Information Resource Management)
OJCS	=	Office of the Joint Chiefs of Staff
OMB	=	Office of Management and Budget
USAF	=	United States Air Force
OSI	=	open system interconnection
OUSD(A)	=	Office of the Under Secretary of Defense (Acquisition)
PB	=	President's Budget
PBD	=	program budget decision
PC	=	personal computer
PCAS	=	FYDP Cost Analysis System
PCTCS	=	Pentagon Consolidated Telecommunications Center
PDM	=	Program Decision Memorandum
PEDS	=	Program Review Electronic Delivery System
POC	=	point of contact
POM	=	Program Objective Memorandum
POMCUS	=	Pre-positioning of Materiel Configured in Unit Sets
PPBS	=	planning, programming, and budgeting system
PPI	=	POM Preparation Instructions
PPO	=	Program Planning Objective
RDT&E	=	research, development, test and evaluation
RFI	=	request for information
RFP	=	request for proposals
RISTA	=	reconnaissance, intelligence, surveillance, and target acquisition
SAIC	=	Scientific Applications International Corporation
7CG	=	Seventh Communications Group (USAF)

SF	=	standard form
SLOC	=	sea lines of communications
SMTP	=	Simple Mail Transfer Protocol
SP	=	strategic programs
SPRINT	=	Standardization of Program Review Information Network Technologies
SR	=	senior representative
TASC	=	The Analytic Services Corporation
TCP/IP	=	Transmission Control Protocol /Internet Protocol
TNF	=	Theater Nuclear Force
TWP	=	Tactical Warfare Programs
USAF	=	United States Air Force
U.S.C.	=	United States Code
USD	=	Under Secretary of Defense
USD(P)	=	USD for Policy
USSR	=	Union of Soviet Socialist Republics
WHS	=	Washington Headquarters Service
WP	=	Warsaw Pact
XNS	=	Xerox Network Services

APPENDIX A

INFORMATION RESOURCE MANAGEMENT POLICIES AND DIRECTIVES

1. PURPOSE

This appendix describes the policies, directives, and organizations governing the management of information in OSD.

2. GOVERNING POLICIES AND DIRECTIVES

Authority to plan OSD information resource management (IRM) is established in nine documents:

- Office of Management and Budget (OMB) Circular No. A-130, *Management of Federal Information Resources*

- General Services Administration, *Federal Information Resources Management Regulation (FIRMR)*

- DoD Directive (DoDD) 5010.38, *Internal Management Control Program*

- DoDD 5118.3, *Comptroller of the Department of Defense*

- DoDD 7740.3, *Information Resources Management (IRM) Review Program*

- DoDD 7920.5, *Management of End User Computing (EUC)*

- DoDD 7740.1, *DoD Information Resources Management Program*

- DoDD 7740.2, *Automated Information System (AIS) Strategic Planning*

- DoDD 7750.5, *Management and Control of Information Requirements.*

These documents conform with the Paperwork Reduction Act of 1980, which requires agencies to do the following:

- Manage information efficiently, effectively, and economically

- Comply with the information policies, principles, standards, and guidelines prescribed by the Director of OMB.

The act also requires every Federal agency to designate a senior official to carry out the following IRM responsibilities:

- Maintain inventories of major information systems

- Review information management activities periodically

- Ensure information systems do not overlap

- Fulfill responsibility for acquisition of information technology (IT).

The DoD IRM program was established in June 1983 by publication of DoDD 7740.1. That directive established DoD policy to implement IRM aggressively in ways that enhance mission performance through effective, economic acquisition and use of information.

Under the authority of DoDD 7740.1, the Office of the Deputy Comptroller (Information Resource Management) [ODC(IRM)], formerly the Office of the Deputy Assistant Secretary of Defense (Cost/Management Systems) [ODASD(C/MS)], promulgated five IRM goals for DoD in late 1984:

- Improve DoD mission operations and decision making through effective and economic development and use of information

- Integrate DoD information management activities through consistent plans, programs, policies, and procedures

- Acquire and use IT to improve mission effectiveness, productivity, and program management

- Strengthen life-cycle management of information systems

- Foster general awareness of the value of information and its associated costs.

The DoD IRM program was strengthened in October 1987 when the IRM Systems Directorate was upgraded to Deputy Comptroller status. That office was given an expanded mandate to review and approve all major AIS program plans; develop and enforce AIS life-cycle management and information processing standards; develop AIS training, education, and technical assistance programs; and establish and perform a range of essential AIS assessment and planning functions. Under its expanded mandate, ODC(IRM) is updating and strengthening the review of major AISs and has increased emphasis on compliance with DoDD 7920.1, *Life-Cycle*

Management of Automated Information Systems (AISs), 20 June 1988. In addition, ODC(IRM) has developed an industry interface initiative with three DoD objectives:

- Develop the ability to compete successfully with the private sector in recruiting and retaining information systems professionals

- Become a principal participant in the automation information industry's efforts to develop interoperability standards and a leader in the adoption and implementation of these standards

- Improve its ability to access the expertise of the industry and increase its use of industry expertise in the concepts development, design, and system development of new AISs and existing AIS modernizations.

The importance of IRM in DoD was emphasized again when, in May 1988, the Comptroller wrote to the Military Departments and Defense agencies:

> I regard Information Resources Management to be one of the highest priority areas within the DoD, and regard the aggressive management of AISs as an area in which the DoD can be a trendsetter for the entire Federal Government.[1]

In October 1989, the Deputy Secretary of Defense said it is essential that DoD *improve its information management.* He provided the following guidance to the Military Departments and Defense agencies on DoD corporate information management:

> There appears to be a need to improve the standardization, quality, and consistency of data from DoD's multiple management information systems. More effective use of information systems must be a high priority. . . . DoD should not expend resources to develop and maintain multiple systems or software to meet the same functional requirements. To reduce unnecessary redundancy, common data requirements and formats must be developed, especially in those areas of most utility to the sound management of the entire Department.[2]

The Deputy Secretary established an executive level group of outside experts and DoD officials to recommend an overall approach and action plan to enhance the availability and standardization of common-use information through a Corporate Information Management Plan for DoD. The Comptroller IRM staff will publish a

---

[1]Letter. From the ASD Comptroller. To Military Departments and Defense agencies. Subject: *Future Managerial Direction of DoD Information Resource Management (IRM).* 31 May 1988.

[2]Letter. From the Deputy Secretary of Defense. To Military Departments and Defense agencies. Subject: *DoD Corporate Information Management (IRM).* 4 Oct 1989.

management plan and process guide for developing integrated information systems. Following that, a group of Service and Defense agency functional experts will review information requirements of the OSD, Services, and Defense agencies and consider levels of compatibility and redundancy within each area and will develop uniform and consistent information requirements and data formats within each functional area. The Deputy Secretary requested total cooperation and commitment of the addressees' staffs for this project.

3. DEFINITION OF INFORMATION RESOURCE MANAGEMENT IN OSD

Information resource management in OSD is a combined structure and set of activities through which planning, programming, budgeting, and acquisition of information resources is conducted. The results of these activities should be a coherent strategy for improving use of information resources in the policy process, all within budgetary constraints. "Information resources" are defined broadly to include all information, automated or not; and the media, personnel, and technologies used to manage, store, transport, and process that information. An informed DoD policy has the following qualities:

- *Consistency and integration of information.* OSD policy products should be internally consistent and, to the extent possible, consistent with information in the policy products of other agencies. [DoD Instruction (DoDI) 5000.18]

- *Integrity and security.* OSD systems should ensure the integrity of information and its invulnerability to unauthorized disclosure, denial of use, or destruction to an extent commensurate with the importance of the information to the policy process and national security. (DoDD 5200.28)

- *Responsiveness.* Information should reflect direction from approving authorities outside DoD (Congress, the Executive Office, and other Federal agencies). (DoDD 7740.1 and OMB Circular No. A-130)

- *Accessibility.* Within security constraints, information should be available to users when they need it, either on a day-to-day basis or in national emergencies (OMB Circular No. A-130).

These qualities should guide senior managers in setting information policy priorities.

4.   INFORMATION RESOURCE MANAGEMENT RESPONSIBILITIES

4.1   Corporate Information Management Responsibilities

The ODC(IRM) is responsible for establishing DoD and OSD corporate information management policy. Since little policy guidance has been provided in this area over the past several years, major principal staff offices (MPSOs) have developed their own corporate information management programs. When the working groups discussed in Paragraph 2 of this appendix complete their tasks, ODC(IRM) will probably take a very active role in OSD corporate information program planning.

4.2   OSD IRM Responsibilities

The Chief, Directorate of Systems and Services (DSS) of ODC(IRM) is responsible for collating and coordinating automated information resources at the OSD level and promoting program planning guidance to ensure OSD corporate and principal staff assistant goals are pursued. Automated information resources are a combination of information, computer, and telecommunication resources and other information technology and personnel resources that collect, record, process, store, communicate, retrieve, and display information in AISs. DSS works with senior IRM representatives and points of contact (POCs) designated by the OSD principal staff assistants to acquire resources to support staff mission functions. The Automated Information Resource Management Review Council (AIRMRC) composed of the Deputy Comptroller (IRM) [DC(IRM)] and MPSO senior representatives, using input from POCs, is responsible for preparing the OSD IRM plan and for using that plan to guide allocation of OSD IT resources.

4.3   Principal Staff Assistant IRM Responsibilities

Using the broad guidelines set by the DC(IRM), OSD principal staff assistants are responsible for allocating information resources to support their mission functions. DoDD 7740.1 assigns the following responsibilities to principal staff assistants:

- Designate an IRM representative to coordinate with the Comptroller

- Oversee and manage the following:

  ▶ Development and evolution of information requirements

- ▶ Development and implementation of information systems to meet these requirements

- ▶ Administration of the assigned portions of the annual information collection budget

- Plan and coordinate programs to achieve cost-effective integration of information and information systems

- Identify and put into effect information management initiatives that will improve mission accomplishment

- Ensure OSD information collections are justified, cost-effective, and nonduplicative, require minimum data, and meet essential needs

- Develop, maintain, and provide management information to be used by the Comptroller as the statistical base of information support to other DoD senior executives.

DoDD 7740.2 assigns the following responsibilities to principal staff assistants:

- Provide functional AIS planning guidance to the Comptroller and to the Military Services and DoD agencies for their consideration in their AIS planning processes

- Participate in the planning, programming, and budgeting system (PPBS) process to ensure Service and agency AIS programs appropriately address those AIS issues identified by the OSD functional proponent.

The designated IRM representatives and POCs assist principal staff assistants in establishing processes and procedures to carry out their responsibilities.

5. AIRM PLANNING IN OSD

5.1 OSD AIRM Planning Process

Comptroller guidance discusses AIS strategic planning, IRM plans, and automated information resource management (AIRM) plans. AIS strategic planning is a structured process that produces an integrated plan of action for accomplishing an organization's missions and objectives over a 5-year period or longer. It develops and documents the organization's direction and specifies the AIS programs and resource estimates necessary to support stated missions and objectives. The product of this process is the initial framework, or the planning assumptions and overall strategy, for an IRM or AIRM plan. The Washington Headquarters Service (WHS)

published CSD's first IRM plan in December 1987. Recently, ODC(IRM) published guidelines for producing an OSD AIRM plan.

The DC(IRM) directs the OSD AIRM planning process that identifies, validates, and documents OSD mission-essential information needs, associated IT program categories and related AISs, and accompanying PPBS resource requirements. The DC(IRM) also ensures that the OSD AIRM plan reflects DoD strategic and life-cycle planning policies and supports the OSD Program Objective Memorandum (POM) response to the Defense Planning Guidance (DPG) and subsequent program budget decision (PBD) resolutions during the biennial budget year.

By 1 November each year, DSS will give MPSOs the AIRM planning guidance and a calendar of planning events. The guidance will include planning assumptions, OSD IRM goals, and goal-related strategies.

The proposed OSD AIRM plan will be prepared in accordance with guidance provided in DoDD 7740.2, *Automated Information System (AIS) Strategic Planning*, and draft OSD Administrative Instruction (AI) 56, *OSD Automated Information Resources Management (AIRM)*, now in final stages of coordination. The AIRM plan will have the following major elements:

- The OSD strategic plan, which contains the following:

    - An assessment of the environment in which IRM planning is taking place to include planning assumptions and a technology assessment.

    - OSD IRM goals, which are broad general statements about "ideal states" to which the organization aspires.

    - Objectives that specify one or more measurable accomplishments and the tasks, milestones, and task completion times required to achieve the objective by a certain time.

    - Information technology architectures that constitute the current, planned, and target OSD AIS environment. These architectures should address the information requirements, flows, and system interfaces to be used throughout OSD and between OSD and outside organizations, showing how individual systems fit together to form a comprehensive whole.

    - OSD technology-related standards.

    - Related security accreditation plans.

- The OSD information technology program plan, which describes the OSD IT program categories and the functionally oriented AISs into which component IT projects will be grouped.

- The PPBS IT fund submission.

5.2 Relationship Between the AIRM Plan and the PPBS Process

To establish a clear relationship between automated IT commitments and mission functions and goals, AIS strategic planners must take the PPBS cycle into account. The OSD AIRM plan will be published every 2 years to coincide with the budget cycle, and it will be updated during the off-year. The OSD AIRM plan, as reflected in the AIRMRC's decisions, will be updated to be consistent with the OSD portion of the President's budget and the supporting IT exhibits. The plan may result in adjustments to resources through the normal PPBS process.

An OSD IT program category contains functionally oriented AISs to which MPSOs can relate their IT projects. Each OSD IT program category and its AISs are documented in both the OSD AIRM plan and in the OSD PPBS. IT program categories and OSD AISs provide groupings for MPSO projects and are used to assist OSD decision makers in setting priorities and allocating resources.

An MPSO project is a specific set of activities with a distinct beginning and ending that support accomplishment of an IRM objective. Budget Exhibits 43A and 43B describe a project or interrelated projects which support specific IRM objectives.

5.3 Principal Staff Assistants' Strategic IRM Plans

A strategic IRM plan for a principal staff office contains management goals and objectives, IRM goals, goal-related objectives, and a process and strategy for managing information resources within the principal staff office. The IT budget submission documented in an approved IRM plan implements a strategy for each AIS for which the principal staff office is the primary sponsor. If the principal staff assistant issues AIS strategic planning guidance to the field as part of his/her functional oversight responsibilities, the guidance can be either in the form of a strategic plan for all AISs that support that function in DoD or incorporated into overall strategic guidance to the field.

6. TECHNICAL CONSIDERATIONS

According to IRM policy, two technical areas — security and interoperability — should be considered when AIS acquisition is planned. The following subsections describe IRM policy in these respects. (Security is also discussed in Section 3.4 in the main report and in Appendix E.)

6.1 Security

The FIRMR (Part 201-7), Appendix III of OMB Circular No. A-130, and the National Technical Systems Security Committee (NTSSC) require agencies to establish policies and procedures ensuring that under all conditions sensitive data will be safeguarded from disclosure and from unauthorized modification or destruction. Adequate security must be provided for all automatic data processing (ADP) and telecommunications systems and services, including those provided by contractors.

Every installation with an ADP and telecommunications system is required to have a designated security person responsible for developing, implementing, operating, and testing the ADP and telecommunications security program.

DoD has a special interest in security issues because of the potential damage to national security that could result from compromise of the information it manages. DoDD 5200.28, *Security Requirements for Automatic Data Processing (ADP) Systems*, establishes policy for DoD ADP security issues.

6.2 Interoperability

OMB Circular No. A-130 (§8.b.9) requires that IT be acquired or developed "in a manner that facilitates necessary compatibilities." OSD manages many interrelated sets of automated information. DoDD 7740.1 (§E.3) requires that this information be structured to encourage sharing of information and appropriately consolidated for decision making (§F.1.i). Principal staff assistants are responsible for making sure that information systems within their areas of responsibility are interoperable to the extent possible and that functional managers consider the interoperability required to support the sharing of all data of corporate DoD interest.

7. ACQUISITION CONSIDERATIONS

7.1 Identification of Requirements

Because the creation or collection of data requires the allocation of scarce resources, the user must first ascertain that the required data are not available from other sources. DoDD 7750.5, *Management and Control of Information Requirements*, specifies that each item of data in an information requirement be evaluated and screened against data in existing collections to determine whether such information can satisfy the requirement.

Every IRM project requires a functional description commensurate with the cost and complexity of the system. DoD Standard 7935, *Automatic Data Systems (ADS) Documentation*, provides guidance for assigning a complexity rating to IRM projects. The FIRMR requires the development of specifications to a level of detail that promotes competition. Functional specifications are the preferred method of expressing user requirements in specification documents, but the type of each specification should depend on the nature of the mission need and the ability of the market to satisfy those needs.

7.2 Sole-Source Procurement

Specifications should not limit the number of responsible sources that can satisfy a requirement. Under the Federal Acquisition Regulation and the FIRMR, agencies should select and impose only those specifications and standards that contribute to requirements essential to the defined mission performance of a system. Before exercising a renewal option for a system selected on a sole-source basis, the agency concerned must conduct a new market survey to determine the availability of alternative sources of supply.

7.3 Economic Analysis

The FIRMR requires that an economic analysis be performed for every project with a life-cycle cost that exceeds $50,000. The economic analysis compares the costs and benefits of the alternatives systematically to identify those that yield the greatest benefit for a given level of cost. Typically, several system configurations are capable of meeting system objectives. Projects with life-cycle costs under $50,000 require a comparative cost analysis, which "may be limited to an analysis that

demonstrates that the benefits of acquiring the proposed system will outweigh the costs." (FIRMR, Part 201-30.009-1)

8. IRM REVIEW

DoD Directive 7740.3, *Information Resources Management (IRM) Review Program*, establishes the DoD IRM program for reviewing IRM activity. It says IRM activities include "AIS life cycle management; AIS strategic planning; data administration; reports, records, and forms management; information collection and dissemination; and the application and use of information technology (IT)." IT is the hardware and software used in information processing including "computers, telecommunications, micrographics, office automation."

The DoD has the following policy:

- Hold periodic reviews of IRM activities to ensure that they are being conducted efficiently, effectively, and economically

- Use regular reviews and evaluations of IRM activities to further DoD IRM program goals and objectives

- Select IRM activities for review based on mission impact, resources involved, and potential vulnerabilities.

In meeting the review requirements of this regulation, DoD components should take advantage of all ongoing reviews of IRM activities; i.e., AIS life-cycle management reviews, Inspector General audits, internal control reviews, vulnerability assessments. Each DoD component should identify planned reviews of its IRM activities and report the results of completed reviews to the Comptroller.

APPENDIX B

INFORMATION RESOURCE MANAGEMENT PLANNING, PROGRAMMING, AND BUDGETING

1.   PURPOSE

This appendix provides procedures for the planning, programming, and budgeting for information resources in the Office of the Assistant Secretary of Defense (Program Analysis and Evaluation) [OASD(PA&E)]. It complies with automated information resources management (AIRM) policy guidance summarized in Appendix A and ensures the guidance provided in the OSD AIRM plan, Administrative Instruction (AI) 56, *Computer and Office Automation Resource Administrative Instruction*,[1] and appropriate DoD directives and instructions is applied to AIRM processes within the PA&E.

2.   APPLICABILITY AND SCOPE

The procedures described in this appendix apply to the acquisition and use of the following information resources: software (off-the-shelf and custom developed or modified); computer equipment and peripheral devices; telecommunications equipment; office automation (OA) and word processing equipment; timesharing services or facilities; and data collected for use in or created by automated systems.

3.   DEFINITIONS

3.1   OSD Major Automated IRM Review Council

The AIRM Review Council (AIRMRC) oversees the OSD AIRM program to ensure that it effectively supports OSD's performance of its organizational missions and that its administration is consistent with applicable DoD directives and instructions. The AIRMRC conducts quarterly senior OSD management and budget reviews, arbitrates competing priorities for AIRM resources, and approves the annual OSD AIRM plan. The council is composed of Deputy Assistant Secretary of

---

[1]AI 56 will be superseded by an AI currently in the final stages of coordination. Its title is *OSD Automated Information Resource Management (AIRM)*.

Defense (DASD)/Deputy Under Secretary of Defense (DUSD)-level executives or their representatives and chaired by the Deputy Comptroller (IRM).

It is supported by the AIRM Steering Committee composed of point of contact (POC) representatives of each major principal staff office (MPSO) and chaired by the Chief, Directorate of Systems and Services (DSS) of the Office of the Deputy Comptroller (Information Resource Management) [ODC(IRM)]. That group, supported by the DSS focal points who act as liaison between DSS and the POCs, provides assistance in the preparation of AIRM plans and budgets for the AIRMRC review and approval.

3.2   PA&E Information Resource Review Council

The Information Resource Review Council (IRRC) reviews all PA&E information resource plans, programs, and budgets for consistency in supporting management goals and objectives; recommends program and project priorities for consideration by the ASD(PA&E); and assists the Assistant for Computer Science (ACS) in preparing the PA&E AIRM plan. The IRRC is chaired by the ACS with a representative from each DASD(PA&E).

4.   RESPONSIBILITIES

The ASD(PA&E) is responsible for designating a senior IRM representative for development of the PA&E AIRM program and to serve as a member of the AIRMRC.

The PA&E Director for IRM (DIRM) is responsible for the following actions:

- Serving as the senior IRM representative of the ASD(PA&E) on the AIRMRC

- Reviewing and approving the PA&E AIRM plan and budget for submission to the Comptroller

- Resolving PA&E information resource issues that are not settled during the normal coordination and review process

- Acting as the senior IRM policy official for life-cycle management of PA&E systems

- Ensuring life-cycle management practices are observed in the management, acquisition, and use of information resources.

The ACS is assigned the following responsibilities:

- Serving as the Automated Information Resource Manager for the PA&E and recommending and implementing policies for managing, acquiring, and using automated information resources

- Serving as chairperson for the PA&E IRRC and acting as the PA&E POC on the OSD AIRM Steering Committee

- Coordinating the preparation of the PA&E AIRM plan and budget, establishing priorities among PA&E projects and programs, and ensuring the linkage of information technology (IT) projects to management goals and objectives and, as appropriate, to OSD AIRM goals and objectives

- Acting as the representative of PA&E to the DSS

- Monitoring the performance and progress of projects encompassing the acquisition and use of AIRM resources to ensure life-cycle management practices are observed in the management, acquisition, and use of information resources

- Approving the obligation of PA&E automated information resources within the budget program approved by the ASD(PA&E)

- Ensuring execution of the PA&E automated information resource budget is in accordance with the PA&E AIRM plan

- Allocating information resources in accordance with ASD(PA&E) direction and review their use

- Initiating, evaluating, and monitoring technical support agreements among PA&E activities and Federal or commercial technical support sources

- Implementing procedures and providing technical assistance to PA&E staff members for planning, acquisition, and use of information resources.

PA&E Deputy Assistants are each responsible for the following activities:

- Designating an Information Resource Management Officer (IRMO) for AIRM who is responsible for coordinating with the ACS for the acquisition and use of AIRM resources

- Establishing appropriate procedures for managing information resources within their offices to facilitate overall IRM processes described in this appendix

- Establishing priorities for acquiring and using information resources in support of office goals and objectives

- Serving as, or designating, a project manager for each project encompassing the acquisition and use of AIRM resources

- Designating a security officer for automated information system (AIS) security plans, controls, and practices.

Information Resource Management Officers are responsible for the following activities:

- Coordinating and submitting automated information resource requests and budgets through the ACS

- Providing and coordinating technical assistance required by their staffs in planning for, acquiring, and using automated information resources

- Advising the ACS on priorities, needs, and alternatives for meeting their automated information resource requirements

- Ensuring each directorate within the Deputy Assistant's office has a system administrator to manage that directorate's information system resources.

5. PROCEDURES FOR INFORMATION RESOURCE PLANNING AND PROGRAMMING

5.1 Planning and Programming Overview

The formal planning and programming phases of the IRM process are carried out in conjunction with the DoD Program Objective Memorandum (POM) process. The OSD strategic AIRM plan is revised every 2 years when DoD prepares a new budget. DSS issues OSD AIRM planning guidance in November, and the ACS provides the OSD planning assumptions and OSD and PA&E AIRM goals and objectives to each PA&E Deputy Assistant in January. The ACS calls for project information planning data from IRMOs in March. This planning information describes how each Deputy Assistant plans to allocate funds to each project over the current fiscal year and the subsequent 5 years. The planning information indicates project priorities and how each project supports the Deputy Assistant's goals and objectives as well as the PA&E IRM goals, objectives, and information programs.

The ACS reviews the Deputy Assistants' plans for consistency with the ASD(PA&E) AIRM goals and objectives and for opportunities to reduce duplication. The ACS also collates all PA&E project funding against IRM goals and objectives and OSD programs to establish alternative funding profiles to remain within expected

budget constraints. The DIRM meets with ASD(PA&E) Deputy Assistants to resolve AIRM planning and budgeting issues when there is staff disagreement.

The ACS prepares, staffs, and updates the AIRM plan for approval by the ASD(PA&E) by mid-May. Funding issues that require resolution by the Comptroller are forwarded through the AIRM Operations Committee, the AIRM Committee, and/or the OSD AIRM Review Council.

5.2   Budget and Execution Overview

The approved IRM plan serves as the baseline for all budgetary information resource activities and must be revised as budget information changes. As budget constraints change, the ACS revises budget plans and programs in accordance with ASD(PA&E) guidelines set forth in the AIRM plan. Budget changes that severely affect the PA&E mission may necessitate revision of the AIRM plan and/or resubmission of the requirement to the OSD AIRM Review Council.

The ACS submits periodic reports to the Deputy Assistant IRMOs on the status of obligations against project funds and the progress on meeting assigned IRM goals and objectives. Standard Form (SF)-562 is the mechanism for implementing contract requests to meet project objectives within already-approved project funding. The process for submitting and tracking SF-562s is handled among each IRMO, the ACS, and the DSS.

New requirements for information resources are either included in planning for the next planning and programming cycle, satisfied from current PA&E project resources, or submitted to the DSS and the AIRM Steering Committee for allocation of additional resources.

5.3   Acquiring Information Resource Support

The process for obtaining support for information resource requirements begins with a statement of need from an office director to the appropriate IRMO. The IRMO and office director, assisted by the office system administrator, document the validated need for support using one or more of the following methods:

- Modifying an existing project description

- Preparing a memorandum of agreement with another PA&E office or DoD organization to meet the need, with appropriate compensation arrangements

- Preparing a new project description.

The ACS is available for consultation on how to best meet new requirements within overall PA&E information resources.

APPENDIX C

INFORMATION PROJECT SUPPORT FOR PA&E IRM PROGRAMS

1.   PURPOSE

This appendix describes the linkage between information resource management (IRM) programs and the Assistant Secretary of Defense (Program Analysis and Evaluation) [ASD(PA&E)]'s IRM projects. OSD IRM programs are described in Appendix B, while ASD(PA&E) IRM projects are described in this appendix. This linkage relates the allocation of information technology (IT) and budget resources at the project level to higher level IRM programs and thereby to priority-setting management and IRM goals.

2.   APPLICABILITY AND SCOPE

The projects described in this appendix and their relationships to IRM programs reflect information gathered by LMI during a round of interviews of Office of the ASD(PA&E) [PA&E] staff and contractors. These data are now being reviewed by the PA&E staff for further revisions prior to submission to the Office of the Assistant Secretary of Defense (Comptroller) [OASD(C)] as part of the annual OSD IRM review process.

In accordance with the major conclusions of this report, which emphasize the need to centralize the management of all information resources within PA&E, the projects include activities that involve automated information system (AIS) processes and applications, document storage and retrieval functions, and studies. It is doubly important to include studies in IRM planning. First, those studies often include activities that are more appropriately categorized as AIS activities, and second, they often precede or even define requirements for AISs themselves, thus providing early indicators of AIS requirements.

3. OSD IRM PROGRAMS AND GOALS

3.1 OSD Automated Information Resource Management Programs (AIRMs)

3.1.1 AIRM Program 1: DoD Policy and Planning

Automated IRM Program 1 includes four AISs:

- *AIS 1.1 DoD Political-Military Planning.* Develop policies, plans, and procedures in support of the Defense Planning Guidance (DPG) and provide analytical support for arms control negotiations, political-military affairs, operational and contingency planning, long-term planning projections, economic policy including alliance burden sharing, national security special activities, and space policies.

- *AIS 1.2 Emergency Planning and Preparedness.* Develop policies, plans, and procedures in support of emergency planning and preparedness and provide analytical support for mobilization to include industrial base mobilization and surge activities.

- *AIS 1.3 DoD Technology Transfer.* Provide oversight of all DoD activities related to technology transfer.

- *AIS 1.4 DoD Net Assessments.* Plan and conduct net assessments for the Secretary of Defense.

3.1.2 AIRM Program 2: DoD Resource Management, Management Improvement, and Information Resource Management

Automated IRM Program 2 includes four AISs:

- *AIS 2.1 DoD Financial and Resource Management.* Coordinate and control Five Year Defense Plan (FYDP), to include reviewing program and budget, and monitoring of resource allocation.

- *AIS 2.2 DoD Management Improvement and IRM.* Develop DoD management improvement agenda and internal management control programs, review and approve all major AIS program plans, and develop AIS and IRM policies.

- *AIS 2.3 DoD Corporate Information Management.* Manage DoD corporate information, with emphasis on improving the standardization, quality, and consistency of corporate data.

- *AIS 2.4 DoD Program and Cost Analysis.* Provide the Secretary of Defense with independent identification of issues, analysis and evaluation of programs, and analysis of program costs.

3.1.3 AIRM Program 3: DoD Acquisition Policy, Planning, and Oversight

Automated IRM Program 3 includes four AISs:

- *AIS 3.1 Acquisition Management and Oversight.* Supervise DoD acquisition system, formulate defense acquisition policy, review and oversee major defense acquisition programs, and oversee acquisition planning and resources.

- *AIS 3.2 Defense Research and Engineering.* Manage scientific and technical information, manage basic and applied research, and formulate policy for development of technology base and for the effective design, development, engineering, testing, and support of weapon systems.

- *AIS 3.3 Production and Logistics.* Develop procurement policy and oversight, oversee production and manufacturing, provide logistics support management, develop industrial base policy, oversee installation management, and provide environmental policy and services.

- *AIS 3.4 Command, Control, Communications, and Intelligence (C3I).* Design, engineering, test, and evaluation of C3I acquisition programs.

3.1.4 AIRM Program 4: DoD Manpower Policy, Planning, and Oversight

Automated IRM Program 4 includes three AISs:

- *AIS 4.1 Total Force Structure Analysis Activities.* Formulate policy, analyze manpower and readiness requirements, and develop policy for active and reserve forces and civilian manpower strengths.

- *AIS 4.2 Management of Force Personnel Matters.* Motivate work force and productivity programs; oversee personnel acquisition; and oversee and formulate policy for personnel compensation, health, and welfare.

- *AIS 4.3 Military Manpower Mobilization.* Guide and coordinate manpower mobilization planning and oversee its execution.

3.1.5 AIRM Program 5: OSD Executive Policy Management Support

Automated IRM Program 5 includes five AISs:

- *AIS 5.1 SECDEF Direct Support.* Provide general defense policy administration, representation, and oversight.

- *AIS 5.2 Administration and Management of the OSD.* Develop administration and organizational policies and execute those policies in OSD and DoD.

- *AIS 5.3 Legal Counsel Activities.* Provide all legal services and related activities.

- *AIS 5.4 Public Information Dissemination.* Promulgate general news and information services for internal DoD and external audiences.

- *AIS 5.5 Legislative Affairs Activities.* Provide all legislative coordination and communications activities.

3.1.6 AIRM Program 6: OSD Administrative, Logistical, and Operational Support

Automated IRM Program 6 includes three AISs:

- *AIS 6.1 Administrative Support Systems.* Plan and provide administrative support and services to OSD staff and offices, to include budgeting and accounting, security, and personnel and records management.

- *AIS 6.2 Information and Data Systems.* Manage OSD executive decision support systems.

- *AIS 6.3 Building Management Activities.* Manage DoD-occupied space in the National Capital Region (NCR).

3.2 OSD Information Resource Management Goals

The Director for Systems and Services (DSS), OASD(C), is responsible for the accomplishment of the following OSD AIRM goals.

3.2.1 Goal 1

Increase productivity through the effective and efficient management of information resources, concepts, and technology.

3.2.2 Goal 2

Improve interdepartmental and intradepartmental electronic dissemination of commonly required functional information.

3.2.3 Goal 3

Improve the integrity, security, availability, and auditability of information technology systems.

3.2.4 Goal 4

Acquire and utilize the information technologies to improve mission-oriented services and reduce operating costs.

3.2.5 Goal 5

Ensure the effective component-level administration of the IT program plan.

4. PA&E PROJECTS

The projects described in this appendix have been identified in the initial interviews with PA&E staff and contractors and in a review of studies and ADP contract documents. The AIS projects described below in Section 4.2, and the allocation of their programmed funds to OSD AISs, are being revised at the time of this writing by an PA&E IRM working group. The studies projects described below in Section 4.1 show both funded and unfunded studies.

4.1 Studies Projects

1. RED ROME

Type: Study

Objective: Improve understanding of Warsaw Pact buildup in the center region and evaluate overall general-purpose force structure alternatives and Conventional Forces in Europe (CFE) proposals.

Supporting Office: Deputy Assistant Secretary of Defense (General Purpose Programs) [DASD(GPP)], Force Planning Division

Point of Contact: Peter G. Nelson, ext. 50881, room 2B256

Funding: Unfunded

2. *Effectiveness of the U.S. Strategic Bomber/Cruise Missile/Airborne Tanker Forces*

Type: Study

Objective: Develop a methodology for assessing bomber/cruise missile penetration capabilities and tanker requirements. Assess the cost-effectiveness of alternative tanker force structures and tanker modernization programs.

Supporting Office: DASD (Strategic Programs) [DASD(SP)], Strategic Offensive Forces Division

Point of Contact: Dr. Richard Burke, ext. 55432, room 2E274

Support: Federally Funded R&D Center (FFRDC)

Funding: Funded for FY90 through FY91

3. *Fighter Transient-Maneuverability*

Type: Study

Objective: Develop transient-maneuverability measures and methodology to extract relevant air combat information from model-generated data.

Supporting Office: DASD (General Purpose Programs), Tactical Air Division

Point of Contact: Roy B. Hempley, ext. 79132, room 2C281

Funding: Unfunded

4. *Capability Measurement (TASCFORM)*

Type: Study

Objective: Refine and expand development and application of TASCFORM methodologies for air and land modernization and force balance quantitative comparisons.

Supporting Office: DASD (Theater Assessment and Planning) [DASD(TA&P)], Europe and Pacific Forces Division. Supports Office of Net Assessment, which is the primary sponsor.

Point of Contact: Frank Tapparo, ext. 70373, room 2C270

Support: Commercial

Funding: Funded for FY90

5. TASCFARE

Type: Study

Objective: Continue providing equipment performance potential scores to evaluate air and ground systems under different manning and equipment levels. Add performance comparisons for allied units and expand spares assessments to U.S. naval and allied forces.

Supporting Office: DASD (Theater Assessment and Planning), Europe and Pacific Forces Division. Supports the Office of the Joint Chiefs of Staff (OJCS), which is the primary sponsor. Also supported by Assistant Secretaries of Defense (Production and Logistics) and (Force Management and Planning) [ASD(P&L) and ASD(FM&P)].

Point of Contact: Frank Tapparo, ext. 70373, room 2C270

Funding: Unfunded

6. Communication Satellite Requirements Survey

Type: Study

Objective: Examine process by which satellite communications' requirements are identified, validated, and approved by the Services, Commanders in Chief of the Unified and Specified Commands (CINCs), and JCS. Project future requirements.

Supporting Office: DASD (Strategic Programs), Strategic Defensive and Theater Nuclear Forces Division

Point of Contact: LTC Gary Zank, ext. 56189, room 2E286

Funding: Unfunded

7. CASTFORM Benchmarking

Type: Study

Objective: Quantify the extent of parallelism and/or divergence in the way that CASTFORM and CARMONETTE play through simulations. CASTFORM is the improved, battalion-level combined arms model that replaces CARMONETTE.

Supporting Office: DASD (General Purpose Programs), Land Warfare Division

Point of Contact: Dr. A. A. Diaz, ext. 77768, room 2B256

Funding: Unfunded

8. Evaluating the Inadequacy of Indirect (Force Infrastructure) Programs

Type: Study

Objective: Develop analytic methods to evaluate the funding adequacy of DoD infrastructure programs such as research, development, test and evaluation (RDT&E), logistics, personnel, and facility support.

Supporting Office: DASD (Resource Analysis) [DASD(RA)], Force Structure and Support Cost Analysis Division

Point of Contact: Dr. John D. Morgan, ext. 54177, room 2D278

Support: FFRDC

Funding: Funded for FY90 through FY91

9. Economic Analysis of Defense Aircraft Manufacturers

Type: Study

Objective: Develop a single, generic measure of output for multiproduct firms and estimate cost functions for aerospace firms. Evaluate importance

of labor as a cost driver and identify cost elements that are increasing in importance.

Supporting Office: DASD (Resource Analysis), Procurement Cost Analysis Division

Point of Contact: Howard Manetti, ext. 70317, room 2D278

Support: FFRDC

Funding: Funded for FY90 through FY91

10. Theater Nuclear Force (TNF) Structure

Type: Study

Objective: Analyze the implications of conventional force reductions in Europe on policy, strategy, means of employment, and force structure for nuclear weapons in NATO. Also evaluate extent to which "smart" conventional weapons might perform missions currently assigned to theater nuclear weapons.

Supporting Office: DASD (Strategic Programs), Strategic Defensive and Theater Nuclear Forces Division

Point of Contact: MAJ Robert Cooke, ext. 59180, room 2E286

Funding: Unfunded

11. Fire Support Options

Type: Study

Objective: Define and assess the full range of fire support tasks throughout the battlefield. Determine an optimum fire support program based upon a comparison of U.S. and Soviet capabilities and CFE negotiations.

Supporting Office: DASD (Gener   Purpose Programs), Land Forces Division. Jointly sponsored by the Under Secretary of Defense (Acquisition) [USD(A)], Tactical Warfare Programs (TWP).

Point of Contact: Dick Roemer, ext. 76408, room 2B256

Funding: Unfunded

12. DoD System Life-Cycle Cost/Benefit

Type: Study

Objective: Provide a basis for recommendations on performing cost/benefit analysis on defense systems and development of cost/benefit policies and guidelines. Maintain a cost/benefit database and the Generic Operations Logistics Estimating Model (GOLEM).

Supporting Office: DASD (Resource Analysis), Force Structure and Support Cost Analysis Division

Point of Contact: Ronald C. Wilson, ext. 74311, room 2D278

Funding: Unfunded

13. Force Structure Alternatives

Type: Study

Objective: Assist in determining the costs and benefits of changed peacetime overseas deployments and alternative land force structures.

Supporting Office: DASD (General Purpose Programs), Force Planning Division

Point of Contact: Christopher Wright, ext. 79141, room 2C281

Support: FFRDC

Funding: Funded for FY90

14. Survivability and Effectiveness of Tactical Air Command, Control, and Communications in Wartime

Type: Study

Objective: Assess present and projected vulnerabilities and other limitations of air command, control, and communications (C3) operations and suggest options for improvement.

Supporting Office: DASD (General Purpose Programs), Tactical Air Division

Point of Contact: J. T. Holt, ext. 70522, room 2C281

Funding: Unfunded

15. Budget Implications of Program Changes

Type: Study

Objective: Describe quantitative relationships between force levels, acquisition plans for new and replacement systems, and fiscal year budgets. Suggest a methodology for estimating budget changes associated with proposed procurement and force level changes.

Supporting Office: DASD (Resource Analysis), Procurement Cost Analysis Division

Point of Contact: Howard Manetti, ext. 70317, room 2D278

Funding: Unfunded

16. Spare Budgets, Inventories, Readiness, and Sustainability

Type: Study

Objective: Continue development of a capability to project spares consumption. Add a readiness-rate variable to model.

Supporting Office: DASD (General Purpose Programs), Naval Forces Division

Point of Contact: Mark Mohler, ext. 70968, room 2D312

Funding: Unfunded

17. Joint Suppression of Enemy Air Defenses Capabilities

Type: Study

Objective: Assess present and projected capabilities to suppress enemy air defenses with quick reaction and night attack air operations. Suggest options for improvement.

Supporting Office: DASD (General Purpose Programs), Tactical Air Division

Point of Contact: J. T. Holt, ext. 70522, room 2C281

Funding: Unfunded

18. Cost-Schedule Relationships

Type: Study

Objective: Describe typical expenditure patterns for a variety of aircraft types and derive models for spreading costs over a period of years. Design models to estimate how costs will change if schedules are changed.

Supporting Office: DASD (Resource Analysis), R&D and Procurement Cost and Analysis Division

Point of Contact: Howard Manetti, ext. 70317, room 2D278

Funding: Unfunded

19. Area ASW and Tactical Surveillance

Type: Study

Objective: Determine cost and effectiveness of an area antisubmarine warfare (ASW) system that will destroy enough of the advanced Soviet submarine threat that the United States can use the sea lines of communication (SLOCs).

Supporting Office: DASD (General Purpose Programs), Naval Forces Division

Point of Contact: Arthur Pennington, ext. 70961, room 2D312

Funding: Unfunded

20. Aircraft and Engine Cost Trends

Type: Study

Objective: Identify trends in major cost categories and value-added costs, and assess extent to which errors are magnified by current estimating practices. Suggest improvements in estimating practices.

Supporting Office: DASD (Resource Analysis), R&D and Procurement Cost Analysis Division

Point of Contact: Howard Manetti, ext. 70317, room 2D278

Funding: Unfunded

21. The Role of Naval Mines in ASW

Type: Study

Objective: Analyze the potential contribution that naval mines can make to the conduct of the Navy's ASW mission. Identify cost-effective options against future submarine threat.

Supporting Office: DASD (General Purpose Programs), Naval Forces Division. Principal sponsor is Office of the Under Secretary of Defense (Acquisition) [OUSD(A)] TWP.

Point of Contact: Arthur Pennington, ext.70961, room 2D312

Funding: Unfunded

22. Possibilities and Concepts of Use for Imaging Probes

Type: Study

Objective: Assess technical and operational potential of imaging sensors deployed on or launched from aircraft, satellites, or munitions.

Supporting Office: DASD (General PurposePrograms), Tactical Air Division

Point of Contact: J. T. Holt, ext. 70522, room 2C281

Funding: Unfunded

23. Cost Considerations in Coproduction

Type: Study

Objective: Determine which circumstances indicate that coproduction should be cons'dered and when coproduction leads to cost savings. Derive practical methods for assessing the cost implications of coproduction.

Supporting Office: DASD (Resource Analysis), R&D and Procurement Cost Analysis Division

Point of Contact: Howard Manetti, ext. 70317, room 2D278

Funding: Unfunded

24. Tac Brawler Air Combat Model

Type: Study

Objective: Procure Tac Brawler model, install on the Joint Data Systems Support Center (JDSSC) computer, and provide engineering/analysis support. (This model assists in making fighter tradeoffs.)

Supporting Office: DASD (General Purpose Programs), Tactical Air Division

Point of Contact: Roy B. Hempley, ext. 79132, room 2C281

Funding: Unfunded

25. Joint Model of Models (JMOM) Application Research

Type: Study

Objective: Establish a methodology and define an analysis tool to evaluate model requirements. Use "response surface" techniques to create a practical JMOM tool.

Supporting Office: DASD (General Purpose Programs), Land Warfare Division

Point of Contact: Dr. A. A. Diaz, ext. 77768, room 2B256

Funding: Unfunded

26. Army Aviation Air-to-Air Capabilities Study

Type: Study

Objective: Evaluate cost-effectiveness of potential Army air-to-air (anti-helicopter) combat capability alternatives by simulation modeling and cost analysis.

Supporting Office: DASD (General Purpose Programs), Land Forces Division

Point of Contact: LTC Dewey Tucker, ext. 77085, room 2B256

Funding: Unfunded

27. RISTA Capabilities for Theatre Warfare Operations

Type: Study

Objective: Assess present and projected reconnaissance, intelligence, surveillance, and target acquisition (RISTA) capabilities in wartime and evaluate options for improvement

Supporting Office: DASD (General Purpose Programs), Tactical Air Division

Point of Contact: J. T. Holt, ext. 70522, room 2C281

Funding: Unfunded

28. NATO Mobilization

Type: Study

Objective: Describe and analyze the mobilization systems of the non-U.S. Central Front countries and develop options for increasing the readiness of ground forces for these countries.

Supporting Office: DASD (Theater Assessment and Planning), Europe and Pacific Forces Division

Point of Contact: Frank Tapparo, ext. 70373, room 2C270

Funding: Unfunded

29. State-of-the-Art Surveys in Military Operations Research

Type: Study

Objective: Assist senior decision makers in weighing the consequences of alternative decisions, by joint sponsorship of one major and three minor surveys.

Supporting Office: DASD (General Purpose Programs)

Point of Contact: Herb Puscheck, ext. 50528, room 2E330

Support: FFRDC

Funding: Funded for FY90

30. Aircraft Cost Database Update

Type: Study

Objective: Update and expand current aircraft database, structuring it for the automated Cost Analysis System (CAS) now under development for dial-up to DoD cost analysis organizations nationwide.

Supporting Office: DASD (Resource Analysis), R&D and Procurement Cost Analysis Division

Point of Contact: Geraldine W. Asher, ext. 70317, room 2D278

Support: Commercial

Funding: Funded for FY90 through FY91

31. NATO Performance Measures and Burden Sharing

Type: Study

Objective: Maintain and improve databases used to evaluate allied contributions and refine and develop performance indicators for assessing alliance efforts toward meeting force-improvement objectives.

Supporting Office: DASD (Theater Assessment and Planning), Europe and Pacific Forces Division

Point of Contact: Milton L. Tulkoff, ext. 54291, room 2C270

Support: Commercial

Funding: Funded for FY90

32. SPRINT Technical Standards and Instructions

Type: Study

Objective: Continue developing SPRINT standards and instructions issued by the Executive Secretary of the Defense Resources Board (DRB) for the programming and execution phases of the planning, programming, and budgeting system (P, 3S). Identify and document most sensible techniques for using Wordperfect 5.0, dBase IV, and Lotus to prepare documents required during program and execution reviews.

Supporting Office: DASD (Resource Analysis), Force Structure and Support Cost Analysis Division

Point of Contact: Ronald Porten, ext. 74311, room 2D278

Support: FFRDC

Funding: Funded for FY90

33. Reconciliation of the Defense Economic Impact Modeling System (DEIMS) and Department of Commerce (DoC) Translators

Type: Study

Objective: Identify and explain differences in estimates of defense expenditures among industries from the DoC and DEIMS. (Currently large differences exist in the way that DoC and DEIMS distribute defense expenditures among industries.)

Supporting Office: DASD (Resource Analysis), Economic Analysis and Resource Planning Division

Point of Contact: Paul Dickens, ext. 72999, room 2D311

Funding: Unfunded

34. DEIMS Translator

Type: Study

Objective: Revise portion of translator that apportions operations and maintenance (O&M) budgets and update documentation to provide greater understanding of how purchases are distributed.

Supporting Office: DASD (Resource Analysis), Economic Analysis and Resource Planning Division

Point of Contact: Paul Dickens, ext. 72999, room 2D311

Funding: Unfunded

35. Information Resource Management Planning

Type: Study

Objective: Prepare a strategic plan for management of information resources within PA&E

Supporting Office: Assistant for Computer Science

Point of Contact: David Ritchie, ext. 70035, room 2D321

Support: FFRDC

Funding: Funded for FY90

36. *Implement Laser Optic Records Management System*

Type: Study

Objective: Establish a laser optic records management system at the earliest possible date in order to reduce storage space, cut retrieval time, and provide faster response to requests for information.

Supporting Office: Documents Control and Library

Point of Contact: Eileen Houska, ext. 70395, room 2E313

Funding: Unfunded

37. *Advanced Mission Oriented Display (AMORD)*

Type: Study

Objective: Research the FYDP program elements used in the Program Objective Memorandum (POM), budget estimate submission (BES) and the President's Budget (PB) during the FY92 through FY93 biennium and update the defense mission categories.

Supporting Office: DASD (Resource Analysis), Force Structure and Support Cost Analysis Division

Point of Contact: Ronald Porten, ext. 74311, room 2D278

Support: FFRDC

Funding: Funded for FY90 through FY91

38. *Missile Cost Database Update*

Type: Study

Objective: Assemble, update, and expand the missile database, structuring it for the automated CAS.

Supporting Office: DASD (Resource Analysis), R&D and Procurement Cost Analysis Division

Point of Contact: Geraldine Asher, ext. 70317, room 2D278

Funding: Unfunded

39. Economics of the Weapon System Acquisition Process

Type: Study

Objective: Research economic issues related to weapon system acquisition to develop a framework for analyzing economic problems associated with the procurement process.

Supporting Office: DASD (Resource Analysis), Economic Analysis and Resource Planning Division

Point of Contact: Debbie Clay-Mendez, ext. 72999, room 2D311

Support: FFRDC

Funding: Funded for FY90

40. E-8B Joint Surveillance Target Attack Radar System (JSTARS) Survivability Enhancement

Type: Study

Objective: Review baseline E-8B configuration, identify possible theater-wide survivability measures, and analyze survivability under each option.

Supporting Office: DASD (General Purpose Programs), Tactical Air Division

Point of Contact: J. T. Holt, ext. 70522, room 2C281

Support: FFRDC

Funding: Funded for FY90

41. DoD Cost Factor Study

Type: Study

Objective: Continue to establish OSD and Service needs for cost factor manuals and databases, identify available information, and recommend solutions to problems.

Supporting Office: DASD (Resource Analysis), Force Structure and Support Cost Analysis Division

Point of Contact: LCDR Daniel Beach, ext. 70221, room 2D278

Support: FFRDC

Funding: Funded for FY90

42. Success and Failure of Cost Analyses

Type: Study

Objective: Provide evidence on whether errors in estimating acquisition costs are due to changes in system specification, flaws in cost estimation, or excessively optimistic assumptions.

Supporting Office: DASD (Resource Analysis), R&D and Procurement Cost Analysis Division

Point of Contact: Dr. David Lee, ext. 75056, room 2D278

Support: FFRDC

Funding: Funded for FY90

43. Program Implications of Force Reductions under a CFE Agreement

Type: Study

Objective: Evaluate the impact on forces and other aspects of defense programs resulting from specific agreements of CFE negotiations. Use the results to assess overall military balance and the contributions each ally makes to the East/West balance.

Supporting Office: DASD (Theater Assessment and Planning), Europe and Pacific Forces Division

Point of Contact: Frank Tapparo, ext. 70373, room 2C270

Funding: Unfunded

44. Deceptive Countermeasures by Soviet Aircraft and Antiship Cruise Missiles (ASCMs)

Type: Study

Objective: Assess susceptibility of U.S. Naval antiair warfare (AAW) systems to deceptive countermeasures and evaluate alternative approaches to counter these techniques.

Supporting Office: DASD (General Purpose Programs), Naval Forces Division, in cooperation with OUSD(A) TWP

Point of Contact: Mark Mohler, ext. 70968, room 2D312

Funding: Unfunded

45. Theater Tactical Air Force Allocation Considerations

Type: Study

Objective: Evaluate future overall size and mix of Air Force tactical force structure considering ongoing negotiations on conventional force reductions in Europe.

Supporting Office: DASD (General Purpose Programs), Force Planning Division

Point of Contact: Christopher Wright, ext. 79141, room 2C281

Funding: Unfunded

4.2   AIS PROJECTS

46. PA&E Remote Computer Site Maintenance

Type: Automatic Data Processing (ADP)

Objective: Provide access and connectivity to Honeywell MULTICS, IBM Headquarters Systems Replacement Program (HSRP), IBM System IT, Defense Data Network (DDN), Xerox Local Area Network (LAN), and Office Automation Secure Information System (OASIS).

Supporting Office: Assistant for Computer Science (ACS)

Point of Contact: David Ritchie, ext. 70035, room 2D321

Support: Seventh Communications Group (7CG)

47. LAN Direct Support

Type: ADP

Objective: Maintain 14 separate LANs in PA&E divisions, 140 Xerox LAN computer systems, and stand-alone Sun minicomputers.

Supporting Office: Assistant for Computer Science

Point of Contact: David Ritchie, ext. 70035, room 2D321

Support: 7CG

48. Aircraft Maneuverability Model (NSEG)

Type: ADP Model

Objective: Analyze aircraft performance capabilities. Allow evaluation of different aircraft and aircraft modifications under a variety of environments.

Supporting Office: DASD (General Purpose Programs), Tactical Air Division

Point of Contact: Robert Croteau, ext. 72255, room 2C281

Support: 7CG

49. Biennial DoD Program Review Support

Type: ADP

Objective: Support program review analysis and preparation of program review documents such as POMs, Issue Outlines, and Program Decision Memorandum (PDM) for the DRB.

Supporting Office: DASD (Resource Analysis)

Point of Contact: Ronald Porten, ext. 74311, room 2D278

Support: 7CG

50. Contractor Cost Analysis System (CAS)

Type: ADP

Objective: Develop a database and dial-up system that provides on-line access to contractor cost data for cost analysts nation-wide. (Applications include reporting, graphing and statistical analysis.)

Supporting Office: DASD (Resource Analysis), R&D and Procurement Cost Analysis Division

Point of Contact: Geraldine Asher, ext.70317, room 2D278

Support: 7CG

51. Defense Economic Impact Modeling System (DEIMS) Support

Type: ADP Model

Objective: Provide estimates of the distribution of DoD expenditures among U.S. industry sectors.

Supporting Office: DASD (Resource Analysis), Economic Analysis and Resource Planning Division

Point of Contact: Paul Dickens, ext. 72999, room 2D311

Support: 7CG

52. NATO Economic Database (NED)

Type: ADP

Objective: Maintain the NED with updates and appropriate changes in structure. (The NED is used to produce the annual burden sharing report to Congress and to support analysis of NATO measures of effectiveness.)

Supporting Office: DASD (Theater Assessment and Planning), European and Pacific Forces Division

Point of Contact: Milt Tulkoff, ext. 76761, room 2C270

Support: 7CG

53. *Program Review Electronic Distribution System (PEDS)*

Objective: Support and maintain the electronic distribution of program review documents to the CINCs and other organizations. (PEDS uses DDN for telecommunications transmission.)

Supporting Office: DASD (Theater Assessment and Planning), Force Projection Division

Point of Contact: MAJ Shirk, ext. 56732, room 2E314

Support: 7CG

54. *Extending OASIS Support to PA&E*

Type: ADP

Objective: Support extension of OASIS capabilities to PA&E with requirements analysis, planning, and installations.

Supporting Office: Assistant for Computer Science

Point of Contact: David Ritchie

Support: 7CG

56. *A Submarine on Submarine Model (ASOSM)*

Type: ADP Model

Objective: Support a monte carlo simulation of capabilities of U.S. and Soviet submarines under various ocean and battle conditions.

Supporting Office: DASD (General Support Programs), Naval Forces Division

Point of Contact: Mark Mohler, ext. 70968, room 2D312

Support: 7CG

57. Documents Control Library System Support

Type: ADP

Objectives: Update and maintain information on documents circulated within PA&E. Generate document control reports on intelligence reports, OSD actions, Government Accounting Offices (GAO) cases, and classified document inventory.

Supporting Office: Document Control and Library

Point of Contact: Eileen Houska, ext. 70395, room 2E313

Support: 7CG

58. Strategic Forces Modeling Support

Type: ADP

Objectives: Maintain and operate models for the DASD (Strategic Forces). Prepare model outputs for review as directed by PA&E staff. Update and maintain databases required by models.

Supporting Office: DASD (Strategic Forces)

Point of Contact: LTC Dahljelm, ext. 70381, room 2E279

Support: Commercial

59. Projection Forces Modeling Support

Type: ADP

Objective: Maintain and operate models for the DASD (Theater Forces and Planning). Prepare model outputs for review as directed by PA&E staff. Update and maintain databases required by models.

Supporting Office: DASD (Theater Assessments and Force Planning)

Point of Contact: Paul Rehmus, ext. 74288, room 2E314

Support: Commercial

60. NATO Measures of Effectiveness (MOEs)

Type: ADP

Objective: Maintain databases of NATO MOEs to support preparation of trip books, comparison of force goals attainment, burden sharing and CFE negotiations.

Supporting Office: DASD (Theater Assessments and Force Planning), European and Pacific Forces Division

Point of Contact: Robert Schneider, ext. 54290, room 2C310

Support: Commercial

61. NATO Burden Sharing Report Support

Type: ADP

Objective: Support preparation of data and analyses for input to OASD (International Security Policy) production of the SECDEF's *Report to Congress on Allied Contributions to National Security*. (Preparation of data includes compilation of data tables and production of graphic displays.)

Supporting Office: DASD (Theater Assessments and Force Planning), European and Pacific Forces Division

Point of Contact: Robert Schneider, ext. 54290, room 2C310

Support: Commercial

62. NATO Defense Planning Questionnaire (DPQ) Support

Type: ADP

Objective: Maintain DPQ database and assist with preparation and review of U.S. inputs to DPQ.

Supporting Office: DASD (Theater Assessments and Force Planning), European and Pacific Forces Division

Point of Contact: Robert Schneider, ext. 54290, room 2C310

Support: Commercial

63. FYDP Tracking System

Type: ADP

Objective: Develop and maintain databases and query and report applications that will identify the status of weapon system programs over time. Track system programs from initial POM through deployment, modernization, and replacement.

Supporting Office: DASD (Theater Assessments and Force Planning), Defense Analysis and Management Information System (DAMIS)

Point of Contact: Robert Schneider, ext. 54290, room 2C310

Support: Commercial

64. Cost Analysis Support for CAIG (Cost Analysis Improvement Group)

Type: ADP

Objective: Support CAIG work with Defense Acquisition Board (DAB) by maintaining cost databases and performing cost analyses of weapon system programs.

Supporting Office: DASD (Resource Analysis)

Point of Contact: David McNicol, ext. 50721, room 2E314

Support: Resource Analysis staff

65. Global Force Trends Database Support

Type: ADP

Objective: Develop and maintain a database of worldwide force data, including units and equipment.

Supporting Office: DASD (Theater Assessments and Force Planning), DAMIS

Point of Contact: Robert Schneider, ext. 54290, room 2C310

Support: Commercial

66. *Ammunition and Weapons Production Database Support*

Type: ADP

Objective: Develop and maintain databases with ammunition and weapons production data about worldwide sources.

Supporting Office: DASD (Theater Assessment and Force Planning), DAMIS

Point of Contact: Robert Schneider, ext. 54290, room 2C310

Support: Commercial

67. *FYDP Tracking System Support*

Type: ADP

Objective: Support queries against FYDP database that allow roll-up of strategic force program da ta across service data.

Supporting Office: DASD (Strategic Programs), Strategic Offensive Forces Division. Supports primary effort by OUSD(A).

Point of Contact: R. Burke, ext. 55587, room 2E274

Support: Commercial

68. *Master Weapons File System Support*

Type: ADP

Objective: Build and maintain database of worldwide weapons inventory.

Supporting Office: DASD (Theater Assessments and Force Planning), DAMIS

Point of Contact: Robert Schneider, ext. 54290, room 2C310

Support: Commercial

69. POMCUS (Pre-positioning of Materiel Configured in Unit Sets) Analysis Support

Type: ADP

Objective: Analyze POMCUS support requirements.

Supporting Office: DASD (Theater Assessments and Force Planning), Projection Forces Division

Point of Contact: LTC Jarvis, ext. 74288, room 2E314

Support: Commercial

70. FYDP Cost Analysis System (PCAS)

Type: ADP

Objective: Provides a PC-based tool for analyzing weapon system program costs, using FYDP data

Supporting Office: DASD (Strategic Programs), Offensive Forces Division

Point of Contact: LTC Baker, ext. 56189, room 2E286

Support: Commercial

4.3 PROGRAM TO PROJECT RELATIONSHIPS

Table C-1 shows the projected FY91 O&M funding relationship among the foregoing projects, aggregated to the PA&E DASD office, and the OSD IRM AIS. As mentioned earlier, an PA&E IRM working group is now preparing a more complete description of projects and their funding relationships with OSD AISs. Table C-1 is therefore only representative of the actual distribution of AIS O&M projected expenditures. Projected procurement funding of hardware and software expenditures in FY91 is estimated to be about $4 million and is distributed across AISs in proportion to DASD office personnel strength and O&M activity.

TABLE C-1

FY91 O&M BUDGET TOTALS BY OSD AIS AND PA&E OFFICE

(Estimated; in $ thousands)

PA&E Offices	OSD IRM program AIS[a]								
	1.1	1.4	2.1	2.4	3.1	3.2	3.3	Total	% of total
Theater Assessments and Planning	877	418	1,172	2,369	1,210	0	560	6,606	55
Strategic Programs	357	0	368	1,103	0	365	0	2,193	18
Resource Analysis	0	0	1,002	874	20[7]	0	0	2,083	17
General Purpose Programs	0	0	300	818	0	0	0	1,118	9
Total	1,234	418	2,842	5,164	1,417	365	560	12,000	
% of total	10	3	24	43	12	3	5		

[a] OSD IRM programs and their supporting AISs are described in Appendix C. The relevant IRM programs related to PA&E IRM projects are: 1 DoD Policy and Planning, 2. DoD Resource Management, and 3. DoD Acquisition Policy The relevant OSD AISs supporting these IRM programs are 1 1 DoD Political-Military Planning, 1 4 DoD Net Assessments, 2.1 DoD Financial and Resources Management, 2.4 DoD Forces, Program and Cost Analysis; 3 1 Acquisition Management and Oversight, 3 2 Research and Engineering, 3 3 Production and Logistics

APPENDIX D

INFORMATION TECHNOLOGY BASELINE

1. INFORMATION PROCESSING RESOURCES

This appendix lists the major elements of the technology supporting the Office of the Assistant Secretary of Defense (Program Analysis and Evaluation) [OASD(PA&E)] information requirements. This ensemble of computers, networks, and workstations comprises the PA&E information technology baseline.

- *Large-scale computing.* PA&E gets large-scale computing support from the Seventh Communications Group (7CG), the Joint Data Systems Support Center (JDSSC), and from civilian contractors. The 7CG provides PA&E with the majority of its large-scale computing support by providing access to the major Five Year Defense Plan (FYDP) corporate databases and running approximately 30 analytical models for PA&E. Most of the PA&E applications now hosted on the Honeywell MULTICS computer system are being converted to run on the IBM 3094 under the Headquarters Systems Replacement Program (HSRP) or on personal computers (PC)s. For the highly complicated applications and applications requiring access to large volumes of data, the HSRP will provide PA&E with an expanded, faster processing capability. For applications converted to PCs, the users will have immediate access to the analytical tools and data that they most commonly use. Some simulation models have not been accessed or used in years. They will neither be converted under the HSRP nor migrated to the PCs; rather, they will be archived. Maintenance of, and access to, other applications used by PA&E are provided by the JDSSC (approximately 70 applications) and three civilian contractors (approximately 60 applications). It appears that PA&E's need for this support will remain constant for the foreseeable future.

- *Desktop computing.* PA&E has more than 180 PCs, terminals, and peripherals available in the work areas of its primary users. These professional workstations, PCs, terminals, and word processors include 20 different models of equipment from 11 different manufacturers. Plans for FY90 include replacement of the majority of the different makes/models with Everex 386s and upgrading the Xerox 6085s by augmenting each with a Companion 386. Some of the current pieces of equipment are linked but most are stand-alone. Unclassified work may be produced on any of these pieces of equipment. Classified processing is done either in the users' primary work areas using stand-alone microcomputers, e.g., IBM and Zenith

PCs or, for access to classified mainframe applications, in the 7CG's secure area.

- *Word processing.* The most pervasive influence of information technology in recent years has been the augmentation or replacement of dedicated/stand-alone wordprocessing systems with networked office automation (OA) systems to improve support for idea processing, research, analysis, and high-quality publications drafting by professional staff members and managers. The administrative personnel of PA&E are linked via the Xerox network with each other and with the rest of OSD. However, in most PA&E offices, the PCs that support professional functions (i.e., the analysts) are not linked to the office suite local area network (LAN) or with the workstations that support word processing. Because of this arrangement, action officers have to use the "sneaker net" to obtain/share information, and the administrative personnel have to re-key documents because it is faster to retype them than to put them into the Xerox system and then have to reformat them. This problem should be eliminated when the current PA&E potpourri of equipment is replaced with the Everex PCs and the Xerox 6085s are upgraded.

- *Local area networks.* The need for secure networks and communications links within PA&E and to information sources external to PA&E is recognized, and user demand for growth in this area is widespread. Currently, only a limited number of individuals in PA&E have access to the classified capabilities of the Honeywell MULTICS via a LAN. Access to the Xerox LAN and to the Office Automation Secure Information System (OASIS) is also restricted to a few individuals because of hardware limitations. To enable users to access needed data and computing capabilities from their work areas, PA&E is installing and enlarging internal networks. Plans for the implementation of local area communications in PA&E include equipment upgrades, attachment to the OSD unclassified backbone, and connection of PA&E offices to the OSD fiber-optic secure LAN.

  ▶ OSD's OASIS contract provides secure Ethernet LANs running Transmission Control Protocol/Internet Protocol (TCP/IP). PA&E will install this LAN to support most PA&E offices with a planned 3-year transition from the present Xerox environment using Xerox Network Services (XNS) protocols.

  ▶ The 7CG is integrating additional hardware into its implementation of the OASIS contract within PA&E. This will include augmenting the Sun 386i machines into the OASIS contract with the other Sun workstations to help meet PA&E's specific hardware requirements. Under the OASIS system, plans are to electronically transmit automatic digital information network (AUTODIN) messages that arrive at the Pentagon Consolidated Telecommunications Center (PCTC) to the specific OSD

directorates to whom they are addressed. Users of the OASIS interface within PA&E will be able to access these messages from workstations connected to the LAN.

- *Wide-area communications.* PA&E's only wide-area communications capability is through a 7CG link to the Defense Data Network (DDN).

2. ARCHITECTURE

PA&E's current architecture is quite limited. Each office has at least one Xerox terminal capable of linking PA&E to other OSD offices via the Xerox System. Each PA&E office also has a physically separated LAN that was designed to enable the sharing of up to Secret data (however, most of the equipment that has been available to the analysts has not been capable of being hooked to it). Except for one analyst's terminal, access to the MULTICS System and other classified mainframe applications has only been available to PA&E's analysts via the terminals in the 7CG area.

PA&E's information technology modernization plans include:

- The upgrading of equipment, e.g., the purchase of Everex PCs and the upgrading of the Xerox 6085s by adding the Companion 386s. This upgrading will provide more computing power for the analysts while limiting the types of PCs that will have to be supported. Plans are to phase out hardware that cannot be integrated into the overall architecture and to link the remaining PA&E equipment to LANs through gateways and other interfaces where needed.

- The addition of minicomputers to the PA&E departmental computing site. These minicomputers will be linked to analysts' workstations to allow analysts to use powerful computing applications at their own desks.

- Standardization on a suite of software packages that will make it easier for analysts to share data/ideas/techniques, while reducing training and support requirements.

- Attaching PA&E offices to the unclassified backbone being installed at OSD.

- Attaching PA&E offices to a fiber-optic secure LAN that is planned for OSD.

APPENDIX E

INFORMATION SECURITY

1.   SECURITY OVERVIEW

The increased use of microcomputers, for both classified and unclassified processing, emphasizes the need for policies and procedures for system security on small systems, networks they are associated with, and products they produce. Washington Headquarters Service (WHS) has provided guidance on these topics in Administrative Instruction (AI) 25, *OSD Automated Information System Security*, and AI 26, *Information Security Supplement to DoDD 5200.1-R*.

AI 25 states that each automated information system (AIS) within the purview of the Director, Physical Security Division

> ... shall have system security, continuity of operations, and risk analysis addressed. These subjects can be covered in a single AIS Security Plan. System security shall be addressed in a security plan in which technical, administrative, personnel, and physical security measures shall be developed.

(Definitions of the terms "technical," "administrative," "personnel," and "physical security" are provided following this overview.)

- In accordance with these instructions, the Office of the Assistant Secretary of Defense (Program Analysis and Evaluation) (PA&E) has published an Automated Information Security Plan that is applicable for all of its office suites. This plan, dated 23 June 1989, has been accredited by WHS. It, along with the Pentagon Suite 2D279 security plan, which is dated 21 October 1988, must be updated upon receipt of the new computing/ communications equipment that is scheduled to arrive in mid-FY90. PA&E must also publish security plans for other sites to which the organization has provided equipment (e.g., the Cafritz Building or similar sites). Because of the sensitivity of the information that security plans are designed to safeguard, they should be reviewed semiannually and changed/updated as required.

- The functional manager of each office suite must protect classified information for that suite. A key requirement in all PA&E suites is the appointment of an AIS security officer. The security officer, on behalf of the functional manager of the suite, is primarily responsible for ensuring the

protection of classified information processed in the suite. Specific responsibilities of the security officer are listed in the *PA&E Information Security Guidelines*.

AI 26 states that "classified information shall be processed on accredited automated information systems (AIS) only" and that "the Director, Physical Security Division, Washington Headquarters Service, shall be the designated approving authority that accredits an AIS to process classified information." All PA&E terminals and personal computers (PCs) that process classified information have been accredited, in writing, by WHS. As new pcs are acquired for PA&E, they will be accredited by WHS.

Information on preparation of AIS security plans, on obtaining WHS authorization, or on the responsibilities of a security officer can be obtained from WHS, Physical Security Division.

2. DEFINITIONS

- *Administrative security* means the management constraints, operational procedures, accountability procedures, and supplemental controls established to provide an acceptable level of protection for sensitive data. This term is synonymous with "procedural security."

- *Personnel security* means the procedures established under the Personnel Security Program to ensure that all personnel who have access to any sensitive information have the required need to know as well as the appropriate clearances.

- *Physical security* means (1) The use of locks, alarms, guards, badges, and similar measures to control access to computers, communications, and related equipment; and (2) the measures required for the protection of the structures housing the computer, related equipment, and their contents from damage by accident, fire, and environmental hazards.

- *Technical security* means those measures, not administrative, personnel, or physical in nature, used to protect the system and its information. This may include communications security (COMSEC), emanations security, operating system enhancements (trusted software), etc.